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PARENTERAL MAGNESIUM SULPHATE IN CORONARY ARTERY DISEASE

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In September 1956 a preliminary report was published which suggested that intramuscular injections of magnesium sulphate might have beneficial effects in certain types of coronary heart disease.[1] In particular it was reported that in a series of 22 cases selected for treatment because of a high beta-lipoprotein fraction, 14 showed a dramatic reduction in this fraction after treatment, while clinically 20 of the 22 cases were markedly improved. Several reports have since been published which stated that the use of parenteral magnesium sulphate was clinically justified.[2-4]

Because of these findings and other suggestive evidence that magnesium might be associated with atherogenesis,[5-8] another trial of the effect of magnesium sulphate was designed. In contrast with the previous trial,[1] cases were selected on the sole criterion of suffering from angina of effort due to coronary heart disease. The effects of magnesium sulphate and a placebo (saline) were compared by means of the double-blind technique. This paper describes the results obtained.

Material and Methods

Sixteen patients were included in the trial—11 males and 5 females of ages varying from 44 to 78 years. All had typical angina of effort; 8 patients had experienced previous episodes of myocardial infarction; 3 patients suffered also from myxoedema (induced in 2 as a therapeutic procedure), 3 from moderate diastolic hypertension, and 1 from diabetes mellitus. None of the patients had any evidence of any other type of heart disease, and in all there was an abnormal electrocardiogram.

Two sets of apparently identical ampoules containing 50% magnesium sulphate or normal saline were labelled A and B respectively. It was not possible for the person giving the injections to know which solution was being used.

Each patient when accepted for trial was allotted treatment A or B in a random manner. The trial was conducted over a period of 8 weeks. Each patient received a total of 16 intramuscular injections of 1 ml. given twice weekly over 2 consecutive 4-week periods. Half the cases received solution A (8 injections) followed by solution B (8 injections), and the other half solution B followed by solution A.

Blood samples were collected on 5 occasions, immediately before receiving the 1st, 3rd, 9th and 11th injections and 4 days after the last (16th) injection. The specimens were collected in the morning approximately 3 hours after a fat-free breakfast of black tea or coffee and dry toast with jam. The following investigations were carried out: Total lipids (Bloor[9]), total and beta-lipoprotein cholesterol (Sperry and Webb[10]), phospholipids (Fiske and Subbarow[11]), lipoproteins (Durrum[12] as modified by Bersohn[1]), and total fatty acids (Stoddard and Drury[13]).

Throughout the trial there was no change in dietary habits or therapy (thyroid in 3 patients, dicoumarol in 2, peritrate, metamine, benecardin and phenobarbitone).

All patients kept a record of the incidence of anginal attacks and of the number of nitrite tablets consumed each day. At each visit they were asked to report on any subjective change.

Results

The results of the trial were assessed with regard to subjective change, average weekly consumption of glycerine trinitrite tablets and biochemical changes.

Of 8 patients who first received sodium chloride all reported subjective improvement. On changing the injections to magnesium sulphate 5 reported further improvement (cases 1, 3, 6, 7, 8), 2 no change (cases 2 and 4), and one deterioration (case 5). Of the 8 patients who first received magnesium sulphate 6 were improved (cases 9, 10, 12, 13, 14, 15). In these the change to placebo injection was accompanied by further improvement in 3 (cases 12, 14, 15), and maintenance of improvement in 3 (cases 9, 10, 13). Two (cases 11, 16) showed no initial improvement while on magnesium sulphate injections but reported improvement on being changed to placebo injection.

As regards biochemical changes the tables reflect the means of the values observed of the control period on normal saline (C), and the treatment period on magnesium sulphate (T). No obvious trends are apparent. The results were not subjected to statistical analysis. With the possibility in mind that delayed effects of the magnesium sulphate injection might be influencing the observed values during the control period in those subjects who received magnesium

TABLE I. PATIENTS WHO RECEIVED PLACEBO (C) FOLLOWED BY MAGNESIUM SULPHATE (T)

Case	Age	Sex	Total Lipids mg.%		Total Cholesterol mg.%		Phospholipids mg.%		Total Fatty Acids mg.%		Cholesterol/Phospholipid Ratio		Beta-Lipoproteins		Beta-Lipoprotein Cholesterol mg.%		Average Nitrite Tablets/Week	
			C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
1[a,d]	59	M	761	909	280	285	262	319	414	522	1·09	·90	75	77	231	232	3	6
2[b]	50	F	990	1,137	352	379	381	384	512	657	·92	·99	76	74	303	323	2	1
3	59	F	798	737	246	231	300	290	478	391	·82	·80	64	67	178	171	3	3
4[a,d]	66	M	1,003	896	331	261	339	278	575	545	·98	·94	82	74	298	216	19	9
5[a]	46	M	710	864	246	278	295	309	359	489	·84	·89	73	74	200	217	1	4
6[c]	52	F	807	903	271	315	314	342	416	486	·87	·92	71	74	220	269	9	5
7	56	F	969	944	323	211	353	364	530	516	·92	·87	75	71	268	243	3	2
8[a]	69	M	526	553	179	154	212	219	273	255	·79	·71	66	67	126	112	7	5
Mean.. ..			821	867	278	299	307	313	445	481	·90	·88	73	72	228	224	6	4

TABLE II. PATIENTS WHO RECEIVED MAGNESIUM SULPHATE (T) FOLLOWED BY PLACEBO (C)

Case	Age	Sex	Total Lipids mg.%		Total Cholesterol mg.%		Phospholipids mg.%		Total Fatty Acids mg.%		Cholesterol/Phospholipid Ratio		Beta-Lipoproteins %		Beta-Lipoprotein Cholesterol mg.%		Average Nitrite Tablets/Week	
			T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C
9	78	M	721	756	283	271	260	282	378	383	1·09	·97	67	70	214	212	5	2
10	52	M	1,082	1,058	280	277	325	305	688	683	·86	·91	79	79	237	235	0	0
11[c]	44	M	754	813	234	257	258	239	440	467	·92	1·09	69	74	185	202	24	15
12[a]	52	M	963	910	387	345	319	334	512	483	1·18	1·04	78	76	338	297	18	10
13[a]	44	M	793	852	259	281	293	290	288	472	·89	·97	66	72	190	230	5	3
14[a]	66	M	696	765	224	261	284	293	367	407	·79	·89	67	68	179	205	12	5
15[a,b,c] ..	66	F	768	945	227	287	266	333	390	549	·83	·86	69	72	189	239	27	20
16	57	M	650	681	239	261	295	277	309	338	·84	·95	68	69	181	205	29	28
Mean.. ..			803	848	269	279	288	294	422	473	·93	·96	70	73	214	228	15	10

T = Mean treatment value. C = Mean control value. a = Previous Myocardial infarction. b = Myxoedema. c = Hypertension. d = Diabetes mellitus.

sulphate first, another set of tables was prepared. In these the blood value obtained before the magnesium sulphate injections was compared with the blood value obtained at the end of one month's magnesium sulphate treatment. Again no obvious trends were discernible.

DISCUSSION

The principal criterion by which subjects were selected for this trial was the presence of repeated typical angina of effort due to atherosclerosis. Although this selection makes the assessment of subjective effects easier it renders assessment of blood lipid studies more difficult.

Thus the series included 3 cases with myxoedema, 1 with diabetes mellitus, and 3 with some degree of hypertension. The initial cholesterol, lipid and lipoprotein values were not grossly abnormal in all cases and were strictly normal in every respect in one (case 8). The percentage beta-lipoprotein was elevated above 75 in only 4 cases. This contrasts with the series of Malkiel-Shapiro and Bersohn in which all cases without an elevation of the percentage beta-lipoprotein were excluded. The results of the 2 series are therefore not comparable. In our series there was a reduction of more than 25 mg.% in the level of beta-cholesterol in 5 patients (cases 4, 7, 13, 14, 15). If a reduction of 50 mg.% or more is taken, only 2 patients (cases 4 and 15) can be included. However, consideration of the group means shows that there were no very striking trends in any of the values examined as a result of treatment with magnesium sulphate.

The injections of magnesium sulphate were no more painful than the saline, and the subjects were in no instance aware of the change from one to the other.

As regards subjective improvement, it is well known that the institution of *any* active treatment produces apparent subjective benefit in patients with chronic illness. This placebo-induced improvement renders any attempt at assessment of drug therapy most difficult. Because of this a large number of subjects must be studied to show significant differences, and a blind or preferably a double-blind technique, as was employed here, is essential. One can only conclude that this series was too small to disprove the possibility of subjective benefit. There was, however, no difference in the frequency and degree of subjective improvement following each of the 2 substances given. Brigden[14] summarizes the situation neatly when he says:

'It is not always realized that myocardial ischaemia shows an

inherent tendency to improve over long periods of time, especially in patients who are able to adjust their minds and life situation to the disease. Many observers have noted that when a patient is started on any new form of treatment improvement is almost invariably the rule. The conclusion cannot be escaped that psychological factors as well as many physical ones are of importance. An understanding doctor-patient relationship is as important in this disease as in any condition in the whole field of medical practice.'

SUMMARY

Sixteen patients suffering from coronary artery disease and typical angina of effort received courses of magnesium sulphate and a placebo using a double-blind technique. No very striking trends were observable in the pattern of blood lipids or lipoproteins though 5 individual cases showed reductions of beta-cholesterol which were possibly significant. Subjective improvement was very great with magnesium sulphate but just as great with the placebo. The results of this series do not conflict with those of Malkiel-Shapiro and Bersohn, who used different criteria for the selection of cases.

The services of Dr. I. Bersohn and his staff, of the South African Institute for Medical Research, Johannesburg, are gratefully acknowledged. We wish to thank Prof. G. A. Elliott for his helpful criticism and advice. The ampoules of sodium chloride and magnesium sulphate were kindly supplied by M.L. Laboratories.

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VAN DIE REDAKSIE

DIE ONTWORTELDE MENS : 'N PROBLEEM VAN ONS TYD

Die twintigste eeu met sy verbete stryd om lewensruimte, sy onversoenbare politieke ideologieë en sy ontredderende wêreldoorloë het vir die geneesheer van die moderne tyd probleme geskep wat vir sy voorgangers in dié beroep nie bestaan het nie. Eén van dié probleme is die verskynsel van die ontwortelde mens waarmee elke dokter vandag in die beoefening van sy praktyk te doen kry.

Die verskynsel van die ontwortelde mens omsluit veel méér as die miljoene ontwrigte vlugtelinge uit 'n verbrokkelde Europa, of die hawelose weeskinders wat nooit geen ouers of tuiste geken het nie. Dit omsluit ook die veeleisende aanpassingstryd van die mens onder 'n veranderende socio-ekonomiese patroon. Maar dikwels word die verskynsel van ontworteling in hierdie gedaante nie herken vir wat hy in die werklikheid is nie.

In 'n land soos Suid-Afrika bring die vertraagde proses van industrialisasie onvermydelik die verskynsel van ontworteling mee. Die verstedelikte plattelander kom gedurende die oorgangsfase voor 'n soortgelyke aanpassingstryd te staan as die ontwortelde emigrant uit Europa. Sy verwysingsbasis vervaag. Hy verval in anonimiteit. Dikwels knel die wurggreep van geld sy gees. Hy ontwikkel sulke psigosomatiese toestande soos hoofpyn, maagsweer, spastiese kolon, asma, angsneurose of hipochondriese klagtes omdat sy persoonlikheid nie opgewasse is teen die veranderende eise van sy bestaan nie. Die prys wat sy ontworteling van hom verg, is die ondefiniëerbare ondermyning van sy gesondheid.

Van veel groter omvang en dieper implikasie is die proses van ontworteling wat die Bantoe-bevolking vandag in Suid-Afrika ondergaan. Die ontstamde Bantoe, los van 'n betekenisvolle sosiale struktuur, kom weerloos te staan voor die titaniese trefkrag van die grootstadslewe met sy, vir hom, lewensvreemde gebruike. Voor die onwrikbare eise van die stad se arbeidspatroon versplinter sy gesinslewe. Die taal van die blanke word 'n simbool van aanpassing. Sekuriteit bly 'n wisselvallige begrip; straf 'n immer-dreigende werklikheid en verwesenliking van die persoonlikheid dikwels 'n onbereikbare strewe. Die uitwerking van hierdie ontwortelingsproses op die psige van die Bantoe kan nie gepeil word nie, maar voor die waarneembare gevolge daarvan kan die mediese beroep nie onverskillig staan nie.

Vry algemene gevolge van sulke socio-ekonomiese en kulturele verskuiwings is dikwels psigopatiese neigings van velerlei aard. Jeugmisdaad, sedelike verval, geslagsiekte, aborsie, prostitusie, drankmisbruik en verslawing aan verdowingsmiddels kan deels na die proses van ontworteling teruggevoer word. Die onregstreekse uitwerking van sulke massa-verskuiwings is nog 'n onbetrede gebied wat op toekomstige navorsing wag.

'n Ander ontwortelde in die wêreld van vandag is die geëmansipeerde vrou van die twintigste eeu wat te staan kom voor sulke onversoenbare teenstellings soos: huwelik—beroep; biologiese vervulling — intellektuele uitlewing; praktiese bedrywigheid — ontwikkeling van die gees, ens. Min ontwikkelde vroue slaag vandag daarin om die innerlike tweespalt wat hul vrywording meegebring het, heeltemal vry te spring. Die struktuur van die samelewing bly tot op groot hoogte onbuigsaam. Die eise van die praktiese lewe waaraan die vrou verwag word om te voldoen, verander nie maklik nie. Die onvermydelike gevolg is dat die vrou blootgestel is aan verydeling. Sy het, soos Moses van ouds, die beloofde land gesien, maar sy beleef nie die geluk van die intog nie. Haar huis het vir haar te klein geword, maar die wyer wêreld bied haar ook geen blywende herberg nie. Sy kom na die dokter se spreekkamer met migraine en asma, met 'n angsneurose of 'n bedruktheidstoestand. Maar aan die grond van haar siekte lê die onbewuste wete van haar ontworteling.

Ook onder die jeug van die atoomeeu is daar tallose ontwortelde. In hul rigtinglose onmag vorm hierdie ontwortelde aggressiewe eendstertbendes. Hulle rook dagga. Hulle raak verslaaf aan ruk-en-rol-musiek. Hulle pleeg seksoortredings. Hulle gaan hulleself te buite om 'n gevoel van mag te smaak, want in die werklikheid voel hulle volkome waardeloos en weerloos. Hulle naasbestaandes het hulle in die steek gelaat. Innerlike inhoud het hul lewe nooit gehad nie. Morele waardes was nooit 'n aanvaarde deel van hul lewenspatroon nie. Geweld moet die kleurloosheid van hul lewe verdring. Aggressie moet die avontuur van die gees vervang en seks moet die vervulling van die emosionele lewe wees. En die geneesheer kry met hulle te doen, hierdie ontwortelde van 'n chaotiese samelewing wat deur hul ouers in die steek gelaat is, en vir wie niemand anders verantwoordelikheid wil aanvaar nie. Die geneesheer sien hulle na 'n straatgeveg of 'n aanranding of 'n skietvoorval; by 'n hofsaak word sy getuienis ingeroep. Die mediese beroep kom te staan voor die kwellende verskynsel van die jeug in opstand teen die wette van die samelewing; die jeug in 'n anargistiese sameswering teen gesag. Weereens soek ons na oorsaak en gevolg. Weereens stuit ons teen die verskynsel van ontworteling en die verreikende implikasies daarvan.

Dit is inderdaad 'n probleem wat aanspraak maak op die ernstige aandag van die geneesheer. So *baie* van die simptome wat vandag onder sy aandag kom, is nie die simptome van organiese siekte nie. Die geneesheer kan dus nie anders nie as om dieper te delf en ook ander oorsake vir hierdie soort siekteverskynsels te soek nie. In sy strewe om sy pasiënte te help, is dit dus goed as hy meer dikwels as in die verlede aan homself die vraag stel: In hoeverre het ek hier te doen met die verskynsel van ontworteling? Die antwoord op hierdie vraag is belangrik, want dit sal bepaal in hoeverre die geneesheer sy benadering van die betrokke probleem sal baseer op 'n meer konserwatiewe mediese vlak of op die breëre vlak van die voorkomende en sociale geneeskunde.

EDITORIAL

THE DISPLACED PERSON : A PROBLEM OF OUR TIME

The twentieth century with its bitter battle for 'lebensraum', its irreconcilable political ideologies and its devastating world wars, has confronted the doctor of today with problems unknown to his predecessors in the profession. One of these problems—a problem which every doctor meets in the course of his daily practice—is the problem of the displaced person.

The phenomenon of the displaced person comprises much more than the millions of unsettled refugees from a disrupted Europe, or the hordes of lost children who have never known parents or the security of a home. It also comprises the exacting struggle for adjustment under the pressures of a changing socio-economic pattern. The true significance and implications of this phenomenon, however, are often not fully recognized.

The somewhat belated process of industrialization in a country like South Africa has inevitably lead to serious displacement. During the period of transition the country dweller, transplanted to the city, has to face the problem of adjustment of a misplaced person. His frame of reference fades away. He lapses into anonymity. The economic struggle for existence oppresses his mind and he develops such psychosomatic conditions as headache, peptic ulcer, spastic colon, asthma, anxiety states or hypochondriacal complaints because his personality is not equal to the changing demands of his existence. Loss of physical and mental equilibrium is the price he has to pay for this displacement.

A problem of much wider range and deeper significance is the process of displacement to which the Bantu in South Africa is being subjected. The uprooted Bantu, in his state of separation from a meaningful social structure, is faced by the titanic challenge of the modern city with its way of life, which is completely foreign to him. His family life disintegrates owing to the merciless demands of the urban labour system. The language of the European becomes a symbol of adjustment. Security is a precarious concept, punishment an imminent reality, and fulfilment of his personality often an unattainable dream. The effect of this process of displacement on the mind of the Bantu can hardly be appraised; nevertheless the medical profession cannot feign indifference when faced by the recognizable features of this problem.

Such socio-economic and cultural shifts often lead to varying forms of psychopathic behaviour. Juvenile delinquency, moral decline, venereal disease, abortion, prostitution, alcoholism and drug addiction can, to a great extent, be attributed to the process of displacement. The indirect consequences of the prevalent mass movements of peoples remain an unexplored field awaiting future research.

Another displaced person in the world of today is the emancipated woman of the twentieth century who cannot escape these inevitable dilemmas: marriage—career; biological fulfilment—intellectual achievement; practical tasks—spiritual development, etc. Few educated women are able to resolve successfully the inner conflicts brought about by their emancipation. The structure of society remains largely inflexible. The average women is still expected to devote her time almost exclusively to the mechanics of practical living. The inevitable consequence of this conflict is that the modern woman is exposed to frustration. Like Moses of old, she has seen the promised land, but is denied the full happiness of crossing its borders. Her home can no longer fulfil all her needs, and yet she cannot find asylum in the outside world—so she comes to the doctor's consulting rooms complaining of migraine or suffering from psychoneurosis or depression. At the root of her trouble, however, is the unformulated awareness of her displaced state.

The youth of this atomic age, too, has its share of displaced persons who, as a result of their chaotic frustrations, drift into aggressive ducktail gangs. They smoke dagga. They revel in wild music. They commit sexual offences. They indulge in extreme behaviour in order to experience a sense of power; in reality they have a strong sense of unworthiness and failure. Their elders have left them in the lurch. Their lives become barren and devoid of spiritual content. Moral values have never been determining influences in their lives. Violence must compensate for the colourlessness of their existence. Aggression must be a substitute for the adventure of the spirit and superficial sex must replace deeper emotional fulfilment. The doctor comes into contact with these moral outlaws for whom nobody appears willing to accept responsibility. He has to treat them after a street fight, or an assault, or a shooting incident. He is called to court to give evidence. The medical profession is challenged by the distressing phenomenon of youth in rebellion against the laws of society; of youth in an anarchistic conspiracy against authority. Once again we look for cause and effect and once again we encounter the problem of displacement and its far-reaching consequences.

This problem calls for serious consideration by the contemporary doctor. Many of the symptoms brought to his notice today are not the symptoms of organic disease, and he therefore has no alternative but to probe deeper in his search for other causes of these conditions of ill-health. In his attempt to help his patient he is thus compelled, today more often than in the past, to ask the question: Am I not perhaps dealing with the phenomenon of displacement? The answer to this question is important, for it will determine to what extent the doctor will approach the problem along conventional medical lines and to what extent according to the principles of social and preventive medicine.

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OBSTRUCTION AT THE BLADDER NECK IN THE ADULT MALE

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Obstruction at the bladder neck in the adult male occurs as the result of a variety of causes and each particular patient is a separate problem demanding individual management. Certain features, however, are common to all types of lesion and the problem can thus be discussed as a whole, differences where they exist being pointed out. Improvements in the management of these patients have resulted in a significant lowering of the mortality. Better control of infection, advances in our knowledge of renal physiology and internal environment, improved operative techniques, the greater use of one-stage operations, the preservation of an intact bladder or its immediate closure, replacement of blood loss, and improved anaesthesia, are all well-recognized advances which have contributed towards this. The recongition and treatment of biochemical imbalances occurring in these patients is one facet of the problem of which there is not as yet a general awareness. Attention to this aspect will result in an even further lowering of mortality and an increased operability rate. This has been adequately demonstrated in departments active in this field in recent years and it has been said with a certain element of truth that the urologist must be a biochemist too[1]. The word management is used here to indicate the manner of treating the patient, including the preliminary assessment, the decision whether to operate, the pre-operative preparation, the method of treatment, the post-operative details, and the complications.

Obstruction at the bladder neck may be prostatic or non-prostatic in origin.

1. *Prostatic Obstruction*

Benign Senile Enlargement. The enlargement represents a hyperplasia rather than an adenoma, both glandular tissue and fibro-muscular stroma being involved. Generally speaking, all except the posterior lobe is involved, but occasionally the middle lobe alone is affected. Surrounding the hypertrophied part of the gland is a false capsule consisting of compressed normal prostatic tissue.

Prostatic Fibrosis. In this condition there is overgrowth of the connective-tissue stroma with atrophy of the glandular element. The gland is of normal size or smaller. The fibrosis leads to a gradual narrowing of the prostatic urethra.

Carcinoma of the Prostate. The gland is not as a rule greatly enlarged but is usually densely hard and nodular. The malignant process develops as a single or multiple nodule and slowly infiltrates the gland; the ultimate effect is likely to be obstruction to emptying of the bladder.

2. *Non-Prostatic Obstruction*

Obstruction at the bladder neck also occurs from causes other than changes in the prostate. The lesions that may be responsible would seem to be congenital in origin, but frequently the obstruction develops slowly and symptoms may not be sufficiently marked for the patient to seek advice until he reaches adult life. In the main these patients present themselves at an earlier age than the group with prostatic disease and there is a history of a poor urinary stream for as long as can be remembered.

Marion's Disease includes (*a*) stenosis of the bladder neck which occurs as a result of either subepithelial fibrosis or muscular hypertrophy, and (*b*) median-bar obstruction, which may be due to either a localized muscular hypertrophy or an adenoma of outlying glandular foci. When adenomatous the glands involved are either those of Albarran, some of which are subtrigonal, or the glands of Jores, which lie between the most median of the prostatic tubules and the urethral mucosa below the sphincter. In both varieties it occurrs as a protuberance projecting forwards from the internal meatus and causing obstruction.

Hypertrophic Interureteric Ridge is frequently associated with one or other of the lesions of Marion's disease. It may also occur as a result of secondary hypertrophy of the fibres of the trigonal musculature following upon existing obstruction at the bladder neck. The hypertrophied ridge overhangs the internal meatus and so causes obstruction.

CLINICAL

An enlarged prostate results in compression from side to side and elongation of the prostatic urethra, or its constriction as a result of fibrosis or malignant infiltration of the prostate. An enlarged middle lobe projecting upwards and overhanging the internal meatus occludes it in the manner of a ball valve. Marion's disease and hypertrophied interureteric ridge occlude the internal meatus in the manner described above. Whatever the underlying pathology the ultimate effect is likely to be obstruction to the emptying of the bladder. Patients with bladder-neck obstruction may present in a number of ways and clinically they fall into several well recognized groups, viz. (1) patients with urinary symptoms, (2) those with acute retention of urine and (3) those with chronic retention of urine.

1. PATIENTS WITH URINARY SYMPTOMS

Patients with obstruction due to prostatic lesions are generally over the age of 60 years, but the appearance of symptoms at an earlier age is not unknown. The group with non-prostatic lesions generally present themselves at an earlier age and there is a history of a poor urinary stream for as long as can be remembered. Whatever the underlying cause, the symptoms of obstruction at the bladder neck are essentially the same. Any or all of the following may be present: Frequency of micturition occurs, both diurnal and nocturnal, the latter being complained of earlier as a rule. It results from interference with the action of the internal sphincter or from congestion and irritation or the accumulation of residual urine. Urgency and some loss of control of micturition may be apparent. The stream loses its force, micturition is slow and often interrupted and dribbling continues after the end of voluntary micturition. Dysuria occurs in the presence of infection—cystitis or prostatitis—or a vesical calculus, which may, however, be painless. Haematuria may occur from an enlarged prostate and is painless and bright red in colour.

The main objective sign is the finding of an enlarged prostate, but its absence does not exclude other lesions. Rectal examination may be misleading even when enlargement of the gland has taken place, for this may occur mainly into the bladder and be inaccessible to the examining finger. The fibrous prostate is not enlarged and is often smaller

than normal. It is usually uniformly harder that the healthy gland. A malignant prostate is likely to be hard and nodular and there may be loss of the median sulcus or fixation of the overlying rectal mucosa. In many of these latter cases the diagnosis is extremely difficult. Residual urine may be present. It can be demonstrated by the passage of a catheter after the bladder has been emptied by normal micturition; but this procedure is generally inadvisable since there is a very definite risk of introducing infection. The necessary information can readily be obtained by means of an intravenous pyelogram, which is desirable in these cases in either event. Films of the bladder are taken immediately before and after micturition and if carefully done will provide as much information as is required, since a knowledge of the exact amount of residual urine is of little practical value. The films are also of value in demonstrating the degree and type of any intravesical prostatic projection.

If the diagnosis is in doubt it may be necessary to carry out an endoscopic examination. If there has been haematuria cystoscopy is essential to exclude other causes of bleeding. When the prostate is much enlarged cystoscopy is apt to cause bleeding or precipitate acute retention. In these cases it is preferably carried out in the theatre immediately before operation. Examination of the urine is invariably carried out.

Patients with minor symptoms such as slight frequency do not necessarily require operation. They can be treated expectantly but must be seen regularly for review. They should be advised to empty the bladder regularly and avoid enforced retention. Any urinary infection is treated. Malignant cases are started on hormone therapy. When frequency interferes seriously with sleep, business activities or social life operation should be considered. Extreme difficulty in micturition, a high residual urine, persistent or recurrent infection, and a history of a recent hernia or piles associated with straining,[2] are indications for operation. Operation is necessary where definite signs of obstruction have developed, since progressive deterioration of renal function is likely to occur. The casual finding of an enlarged prostate without urinary symptoms is not in itself an indication for operation.

2. PATIENTS WITH ACUTE RETENTION

There is generally a history of preceding urinary symptoms but occasionally acute retention is the first indication of bladder-neck pathology. The commonest precipitating cause of retention is enforced holding of the urine when there is a call to micturate, resulting in overstretching of the detrusor musculature. Alcohol in excess, causing rapid diuresis and impaired faculties with neglect to empty the bladder, is another common cause. A sudden chill may precipitate retention.

One attack of retention is as a rule an indication for operation. Catheterization will occasionally restore micturition but further episodes usually occur and repeated catheterization will ultimately result in the introduction of infection with its sequelae. In some centres the use of a catheter in cases of retention due to benign prostatic obstruction is forbidden and these patients are treated by immediate prostatectomy,[3] the pain being temporarily relieved by morphia. This method permits of only the minimum of pre-operative investigation and preparation, and in addition requires a urological service with 24-hour radiological and laboratory backing. It has limited application. The treatment of choice for these patients is preliminary drainage by an indwelling catheter followed within 7-14 days by operation. During this period the patients general condition is assessed, the urine is examined, the blood urea estimated and an intravenous pyleogram done. Where preceding chronic retention is suspected the electrolyte pattern of the plasma is fully investigated. Minor degrees of cardiac embarrassment or impaired renal function can be attended to, any infection present treated, biochemical imbalances corrected, and hormone therapy commenced in malignant cases. This period at the same time allows congestion of the prostate and bladder to subside and enables the patient to recover from any emotional upset occasioned by the retention and hospitalization.

Indwelling Catheter

There is endless discussion concerning the advisability of an indwelling catheter. Liability to infection is the chief argument advanced by those opposed to the procedure. This discussion is spurious, however, if one passes a catheter and connects it to a tube draining into an open unsterile container whose broad fluid surface from then on will serve as a perfect collecting medium for ward dust laden with bacteria. Such an exposed container standing under the bed and filled with obviously infected urine getting cloudier by the day is still a common sight in many wards and is a complete negation of all the accepted principles of modern urology. If properly managed, an indwelling catheter has not been found to carry any serious risk of infection and has in no way prejudiced the results of operation. It has the distinct advantages mentioned above and the use of this method over a period of years has resulted in an increased operability rate with a marked reduction in the number of suprapubic cystostomies done, and has materially contributed to a lowering of the operative mortality and morbidity.

Technique. Of paramount importance is the maintenance of absolute asepsis. Catheterization as a casual procedure is to be condemned. The operator should scrub as for any surgical procedure. Ideally a gown and mask are worn. A sterile trolley is set and careful swabbing of the external genitalia is carried out. A collecting flask, glass connections and tubing are sterilized beforehand, preferably by autoclaving. It is quite satisfactory to use empty vacolitres for this purpose, removing the glass air-outlet tube and retaining the use of the rubber stopper. A glass connection is inserted into one of the inlets in the stopper and to this is connected a length of rubber tubing sufficiently hard not to kink easily. A second glass connection attaches the tubing to the catheter. The remaining inlet in the stopper acts as an air vent and is protected from dust contamination by a filter packed with cotton wool and formalin tablets. A closed sterile system of urinary drainage is thus established and is maintained throughout the period of indwelling catheterization. When it is necessary to empty a full container it is immediately replaced by a sterile one. Should there be any need to break the circuit, the catheter is temporarily sealed with a sterile spigot and the whole drainage system below this replaced by a sterile set. A small catheter (16 or 18 F) is used and is changed at least once a week. Chemotherapy can be instituted concomitantly if desired. The provision of a wire basket for the container enables the patient to be mobile.

Catheterization may present difficulty. The ideal is to insert a self-retaining catheter of the Foley type. This may not be possible at the first attempt. Other types should be tried, viz. a red rubber, a small stiff rubber Tieman's, or a coude or bicoude which can now be obtained in boilable material (woven nylon or plastic). It is often possible to insert a Foley immediately after decompression with one of these. In other instances this can only be accomplished after one of these varieties has been left in the bladder for 12 hours or more. In rare instances it is found impossible to get into the bladder any form of catheter otherwise than by guiding it through the urethra on a curved metal introducer. A general anaesthetic is necessary, and when this is undesirable a useful addition to one's armamentarium is to decompress the bladder by inserting a lumbar-puncture needle into it suprapubically. The needle should be inserted well above the pubes and passed in a downward and backward direction. Excessive mobility is prevented by inserting it through a flat cork which is strapped to the abdominal wall. It is usually possible to pass a catheter after decompression in this manner. In acute retention slow decompression of the bladder is not required.

Suprapubic cystostomy is only carried out when, because of associated medical conditions, operation is likely to be delayed for an appreciable or unpredictable length of time or is completely contra-indicated. The usual contra-indications are recent coronary thrombosis (within 6 weeks), uncompensated cardiac failure, recent symptoms of cerebral arteriosclerosis, and severe renal damage. Many of these patients can be made fit for operation during a period of suprapubic drainage. Hypertension, valvular disease without incompetence, arrythmias, and respiratory disease such as bronchitis or emphysema, are not contra-indications to operation. In cases of active pulmonary tuberculosis, carcinoma of the bronchus, or pulmonary failure, suprapubic cystostomy is desirable. Patients confined to bed for some other illness may develop acute retention supervening on a mild degree of chronic retention.

In most cases the course to follow is clearly indicated, whereas others may tax the surgeon's clinical judgment to the utmost. Where there is doubt it is advisable to institute a period of urethral drainage as a first measure. This can always be followed by suprapubic cystostomy when necessary, as circumstances dictate. This method of management has an added advantage. After a period of urethral drainage micturition is sometimes restored to normal, thus avoiding suprapubic cystostomy completely. In cases with severe renal damage due to chronic retention, however, restoration of voluntary micturition is insufficient grounds *per se* for discontinuing drainage.

3. PATIENTS WITH CHRONIC RETENTION

In this condition there is no pain and the patient is usually unaware of his distended bladder. He may on close questioning admit to an awareness of not emptying his bladder satisfactorily. The retention has been present for a long time as a rule and there is a history of a poor stream, frequency, urgency or dribbling. Symptoms of uraemia may be apparent, such as dyspepsia, loss of appetite, dryness of the mouth, loss of weight, nausea or vomiting, and constipation. Mental changes in the nature of dullness or confusion may be present. On examination the bladder is distended and there may be overflow incontinence. The patient should immediately be admitted to hospital and the further management depends on the findings.

If the blood urea is not raised above 70 mg.%, the electrolyte pattern of the plasma is normal, the urine is uninfected, an intravenous pyelogram can be obtained, and the cardiovascular and general condition are satisfactory, there is no need to institute bladder drainage. Operative treatment of the causal condition can be undertaken as soon as the usual investigations and preparations have been completed. If any of these conditions are not fulfilled it is necessary to institute bladder drainage. The indications for doing a supra-pubic cystostomy are the same as those discussed under acute retention; otherwise a catheter is passed and drainage established by means of the closed system described in a preceding paragraph. Combined with the vigorous treatment of any infection present (sensitivity tests being an essential routine), a period of drainage will generally result in a lowering of the blood urea. The blood-urea level alone, however, is not an accurate assessment of renal function and should not be allowed to create a false sense of security, for marked alterations in the internal environment may be present with little or no urea retention.[4] Existing biochemical imbalances must simultaneously be attended to.

Biochemical Imbalance

Broadly speaking, there can occur disturbances of water metabolism, either retention or dehydration, depletion of base (either sodium or potassium or both), or an acid-base disturbance (usually acidosis). As a rule they are so intimately connected that any attempt at division is unsatisfactory. It cannot be emphasized too strongly that there is no one formula or group of formulae that can be used in determining the type or amount of therapy to be given. Constant clinical and chemical evaluation of the patient, coupled with an intimate knowledge of renal physiology and water and electrolyte disturbances, are required. Each patient is a separate problem demanding individual management.

Relief of obstruction may result in further biochemical abnormalities. After decompression the capacity of the kidneys to conserve or concentrate certain substances may be seriously impaired. There may be a marked diuresis resulting in depletion of Na, Cl, and possibly K, requiring energetic replacement of these ions. In other cases ionic loss is not so severe since no diuresis occurs. The responsible tubular dysfunction is not permanent and partial recovery takes place within a few days, when the kidney is once more able to maintain the internal environment at a constant level. Until this occurs it is important to maintain a high index of suspicion, with constant biochemical supervision of the blood plasma. Any substance found to be deficient is supplemented. Unobserved ionic loss after relief of obstruction in chronic retention, either by operation or drainage, may be the reason for unexplained clinical deterioration often observed.[5]

Drainage is maintained until maximum correction of all abnormalities is achieved. It is permissable to proceed to operation once the cardio-vascular and general condition are satisfactory, the normal electrolyte pattern of the plasma has been restored, and the blood urea is stabilized even if it is still above the accepted normal. Severe anaemia if present is corrected by the transfusion of blood or packed red cells.

Patients admitted in acute renal failure must be treated by suppression of endogenous protein metabolism until renal function has improved. The use of 50% glucose in water as advocated by Merrill[6] is adopted. The solution is administered as a continuous slow drip over the 24-hour period. To minimize the occurrence of venous thrombosis a polythene catheter is inserted into the brachial, cephalic or saphenous vein and passed well up into the larger veins, where the rapid blood flow dilutes the hypertonic solution. Taking into account both insensible loss and endogenous production of water, replacement in the anuric phase should be limited to 400 c.c. of the solution per day for the average man of 70 kg. In addition any overt losses of fluid (vomiting or diarrhoea) must be replaced. The use of androgens for their anabolic effect has recently been suggested. They should be used with caution, as there is evidence that there is a reversal of this action after a period of about 10 days. The development of hyperkalaemia constitutes a grave danger during this phase and must be carefully watched for. A significant rise in the serum-potassium level or the demonstration of typical changes in the electrocardiogram are indications for instituting immediate measures to deal with the situation. In most instances the use of 50% glucose will have been sufficient. The administration of insulin in addition is often of value. The use of ion-exchange resins is of considerable value when administered rectally in the form of a retention enema. A rapid and significant lowering of the potassium level can be achieved in this way. Failure of response to these measures may demand the use of some form of haemodialysis as an emergency procedure. The most satisfactory method is by the use of the artificial kidney, of which there are several types available. Haemodialysis can be life-saving in these cases and under ideal conditions an artificial kidney would always be available.

Antibiotics are given to deal with any infection that may be present. Indwelling catheterization carries a high risk of infection in these patients and is inadvisable.

This regime is continued for as long as the anuria persists. With the return of renal function oliguria is followed by a diuretic phase. Water balance must be carefully regulated from the outset and maintained throughout these phases. The diuretic phase may be accompanied by profound losses of water and electrolytes, which must be replaced. Unobserved losses may lead to sudden and disastrous deterioration in the patient's condition. Caution, however, must be exercised in replacing water eliminated in the urine in the diuretic phase; it may merely represent oedema fluid and then replacement of the total volume will only serve to maintain the oedematous state. The state of hydration at the onset of the diuresis rather than the urinary losses alone should indicate the amount of replacement required. Food is given *ad lib.* as soon as adequate nourishment can be taken voluntarily. Further management will depend on assessment of the patient once renal function has been restored.

SURGICAL TREATMENT

Since obstruction at the bladder neck is due to a variety of causes no single operation covers all the different types. The choice is dependant on the lesion and to a certain extent on the personal preference of the surgeon. If not done previously cystoscopy is carried out in the theatre, and careful inspection of the lesion will confirm the preliminary impression regarding the best method of dealing with the particular patient. The bladder is carefully inspected for tumours, diverticuli or stones, for the presence of any of these will affect the final decision. For the large benign prostate my preference is for the retropubic operation of Millin.[7] It gives the best exposure of the prostatic cavity and thus facilitates diathermy of all bleeding points under direct vision. The hypertrophied gland is carefully and gently enucleated from within its false capsule of compressed prostatic tissue after it has been exposed by a transverse incision through overlying true and false capsule. Vesical calculi, if present, can in most instances be removed quite easily by this route. If they are too large to traverse the bladder neck there is no objection to a central vertical incision in the anterior bladder wall extending upwards from the transverse capsular incision. Diverticuli can be similarly dealt with if necessary. Following this additional incision the catheter is left in for a longer period, 7-10 days usually being sufficient. Bilateral vasotomy is performed.

Prostatic fibrosis, moderate degrees of benign hypertrophy, carcinoma of the prostate, Marion's disease, and hypertrophied inter-ureteric ridge, are dealt with by means of perurethral resection. Perurethral resection followed by hormone therapy is the correct treatment for carcinoma of the prostate. The obstruction is removed and the diagnosis can be confirmed microscopically. In the hands of a skilled operator perurethral resection can also be used for moderately large prostates. It may also be advocated for patients whose general condition precludes other methods of prostatectomy. The resection is carried out under direct vision, either by means of a wire loop activated by a cutting current—the resectoscope, of which there are many varieties and modifications—or the cold punch of Gershom Thompson. The choice is largely a matter of individual preference and experience and there are enthusiastic advocates of both methods. My preference is for the resectoscope, which is an instrument of greater scope and accuracy, enabling the operator to carry out a more complete clearance of the offending tissue. Most instruments are based on the original design of McCarthy, which has been subject to numerous modifications and improvements. The sheath of the instrument is straight and is introduced into the bladder with an articulated obturator. The telescope supports a diathermy electrode consisting of a loop of tungsten wire which is mounted on a rack in one of several ways so that it can be moved within the sheath and alongside the telescope. Resection is carried out by allowing the loop to retract repeatedly, each time cutting off a segment of tissue. Continuous irrigation with fluid is installed to clear the field of vision. Bleeding vessels are coagulated as they are encountered, thus reducing the blood loss to a minimum. In each of the conditions mentioned above as much tissue as is necessary to relieve the obstruction is removed. In cases of benign prostatic hypertrophy an adequate prostatectomy must be carried out, removing all tissue down to the false capsule as completely as in the enucleation practised in the retropubic operation. In the hands of a skilled operator large amounts of tissue can be resected in a comparatively short space of time.

In patients with vesical diverticuli requiring treatment or calculi too large for perurethral removal it is usual to expose the bladder suprapubically and deal with these first. The necessary resection at the bladder neck can in some

instances be carried out simultaneously from the vesical aspect by means of an ordinary diathermy knife.

After any type of operation the bladder is drained *per urethram* by means of an indwelling Foley catheter. An added advantage of this type of catheter is that it can if necessary be used as a haemostat by applying gentle traction. The catheter is connected to a closed drainage system and the usual aseptic precautions observed throughout.

Post-operative Care

As a routine measure these patients are given antibiotic therapy—500,000 units of penicillin and ½ g. of streptomycin twice daily for 5 days, unless sensitivity tests indicate the use of some other substance. Intravenous 5% dextrose in water is continued post-operatively for approximately 24 hours, sufficient being given to maintain the patient's fluid balance. It should be borne in mind that there may be a low urinary output for a varying period (24-48 hours) as a result of antidiuretic hormone release after the surgical procedure and care must be taken not to overhydrate the patient.

Routine irrigation of the bladder is forbidden. In the presence of a good urinary output a free flow through the catheter can readily be maintained by gentle milking of the tubing at intervals. This will aid the passage of any obstructing clots or force them off the catheter eye. A vigilant nursing staff is essential in this connection. Should drainage cease in spite of this routine a useful manoeuvre is to deflate the catheter balloon, thus allowing any clot which has connected around it and obstructed the catheter eye to float off. In most instances this is followed by free drainage. Very occasionally, despite these precautions, the presence of large clots causes drainage to cease. When all other measures have failed very gentle irrigation of the bladder is permissable. A large glass syringe is attached to the catheter outlet and several washings of lukewarm sterile water are given. No force must be used and the soft clots can readily be aspirated into the syringe. Stringent aseptic precautions are observed.

A strictly sterile closed circuit is maintained throughout the period of drainage. The catheter is removed after 72 hours unless the urine is heavily blood-stained or the bladder has been opened. The patient is allowed up after 48 hours. The average stay in hospital is about 2 weeks. In cases requiring minimal resection, e.g. Marion's disease and hypertrophic inter-ureteric ridge, the period of hospitalization may be much shorter.

Complications

A certain degree of post-operative frequency of micturition may persist for a time while the field of operation is healing. A mild degree of infection of the urine may also persist for a time, necessitating the continued use of urinary antiseptics. Sensitivity tests will indicate the correct antibiotic to use and will in most instances considerably reduce the period of treatment required. Most infections clear up without any difficulty when aided by a high fluid intake and a good urinary output. Persistence of infection after several months is an indication for reassessment of the patient. Occasionally a minor degree of obstruction is still found to be present at the bladder neck due either to incomplete initial treatment of the lesion or the development of a mild degree of narrowing as a result of the healing process. In the latter instance the passage of bougies is curative whereas in the former perurethral resection of any remaining obstructing tissue may be required. With careful attention to operative technique this complication is fortunately rare.

Epididymitis is largely prevented by bilateral vasotomy. It still, however, occurs in a few patients, but is usually mild and responds satisfactorily to chemotherapy. Osteitis pubis is rare. It is infective in origin. Atony of the bladder persists in a percentage of cases. It is due to prolonged over-distension of the bladder. Catheterization, either continuous or daily, is instituted for a period and is supplemented with oral carbachol twice or three times a day. In very rare instances a large atonic bladder is refractory to this conservative regime and may have to be dealt with by partial cystectomy.

SUMMARY

The various causes of obstruction at the bladder neck in the adult male are discussed.

The clinical groups into which patients with bladder neck obstruction fall are presented. The management of each group is discussed.

Observations on the advantages of indwelling catheterization are made. The management of the method is presented.

The occurrence of biochemical imbalances in these patients is stressed. The nature, recognition and treatment of these is considered.

The surgical treatment of the various causal lesions is discussed, along with some post-operative details and complications.

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INCOMPLETE ANTIBODIES IN BRUCELLOSIS: AN INDIRECT ANTIGLOBULIN (COOMBS) ONE-TUBE SCREEN TEST

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Since the demonstration independently in 1944 by Race in Britain and Wiener in the USA of the existence of 'incomplete' and 'blocking' antibodies in connexion with rhesus sensitization and haemolytic disease of the newborn, increasing practical use has been made by immuno-haematologists of the fact that agglutinating antibodies may be divided into at least 2 and probably 3 main classes. One class manifests itself by agglutinating cells suspended in saline, the others require that the cells be suspended in a medium such as albumin or that they be treated by enzymes such as trypsin,

papain or ficin. In addition, a very delicate and possibly the most valuable and widely used technique for demonstrating incomplete antibodies is the indirect antiglobulin (Coombs) technique. If, therefore, in attempting to diagnose any given condition, whether haematological or bacteriological, one depends only on the classical saline agglutination reaction a large proportion of cases will inevitably be missed. Inexplicably, these fundamental differences in antibodies have not been utilized to any extent by immuno-bacteriologists, although studies on these lines have been carried out by a number of research workers in many parts of the world during the past twelve years. Morgan and Schutze[1] applied the Coombs technique to the detection of shiga and typhoid antibodies and in many cases found considerably higher titres than by the conventional agglutination techniques. The results were confirmed and the work extended by Stewart and McKeever.[2] Griffiths[3] was the first to demonstrate the blocking mechanism in brucellosis by the use of albumin or serum and obtained positive results when saline tests were negative. Coombs and Stoker[4] investigated the method in the diagnosis of Q fever and concluded that the antiglobulin test was much more sensitive than direct agglutination and promised to be specific. For brucellosis Wilson and Merrifield[5] studied 130 sera from cases of 'PUO' and suspected brucellosis, the antiglobulin technique revealing significant titres where conventional methods were negative. The prozone phenomenon, so troublesome in brucellosis, was eliminated and they decided that the method could therefore be used as a single-tube screening test in the diagnosis of the disease. Wagner and Kuhns[6] found that the modified Coombs test appeared to possess greater specificity and sensitivity than the usual agglutination reactions. They considered that the method might be of value in establishing previous exposure to brucella organisms when other methods fail. In South Africa Coetzee[7] has investigated 400 hospital patients thought not to be suffering from brucellosis, 50 abattoir workers and 17 Onderstepoort laboratory workers, and on the strength of his findings has recommended a one-tube anti-globulin screening test, at a dilution of 1/20 or 1/40 by his technique, in the diagnosis of brucellosis. He considers it to be sensitive and specific.

The present long-term investigation into the diagnosis of brucellosis had its origin in our researches into the haemolytic anaemias; during the past 10 years we have, wherever practicable, screened our patients for a possible infective aetiology for the haemolytic process and in this connexion brucellosis has always been borne in mind. It was felt that, in the light of advances in the knowledge of antibodies, the classical saline agglutination technique was not sufficient to exclude past or present brucella infection and a beginning was made to apply the indirect Coombs reaction for brucellosis to our cases of acquired haemolytic anaemia. It was soon appreciated by colleagues that the test had a much wider clinical application and during the past 3 years more than 2,000 investigations have been carried out. In an attempt to assess the practical utility of the test, the patients have been classified according to the provisional diagnosis provided by the clinicians. The 'no diagnosis given' category which, unfortunately, is always a disappointingly large group in every investigation in clinical pathology, nevertheless serves as a useful control group of miscellaneous patients. Three hundred specimens of blood were taken at random from European and African ante-natal patients and blood donors to serve as a control of the general population.

TECHNIQUE

From the outset the investigation was designed as a one-tube screen test, partly for practical reasons, because the technique is somewhat laborious, and partly because titrations based on agglutination reactions are relatively inaccurate and therefore potentially misleading. The problem of the optimum serum dilution to be used was difficult to decide; various workers have suggested dilutions varying from 1/5 to 1/40 but generally the reactions have been carried out at high temperatures such as 50°C and for incubation times as long as 24-48 hours. After many preliminary investigations it was decided to adopt a final dilution of 1/5 for the screen test because the control group showed that the proportion of the random population giving a positive reaction by the technique used was no larger than would be expected from a condition as prevalent as brucellosis. A negative reaction at the dilution of 1/5 would be reasonably certain to exclude past or present brucella infection whilst higher dilutions or a complete titration can be carried out where indicated.

In the preliminary stages, suspensions of both *Brucella melitensis* and *Br. abortus* were used in parallel but it was found that this was an unnecessary refinement and the antigen finally decided upon was a heat-killed suspension of *Brucella abortus* strain 19 used at opacity 4. Throughout this work the antigen has been kindly supplied by Dr. V. Bokkenheuser, of the Institute's Serological Division, and is identical with the antigen used in his department for the saline agglutination test for brucellosis, the results being thus comparable; in fact in the early stages a considerable amount of comparative work was carried out in both departments.

The patient's serum should be spun completely free of red cells, after which 4 drops of the serum are mixed with 16 drops of the diluted antigen, the mixture being placed in a water bath at 37°C for 3 hours. The tubes are then spun for 1 minute and are examined for the presence of saline agglutinins. If, as is generally the case, no saline agglutinins are demonstrable, the mixture is washed twice in 5 ml. of saline by spinning for 2 periods of 15 minutes. After the second washing the saline is pipetted off carefully and 12 drops of saline are added; the button of packed organisms is broken up thoroughly and the suspension is distributed into 3 tubes of 4 drops each. Two dilutions of anti-human-globulin serum are used, the optimum dilutions for each batch being decided upon by titrating known positive reacting sera from patients. The majority of anti-human sera used for this purpose have reacted satisfactorily at dilution of 1/30 and 1/60 and in practice 4 drops of the 1/30 dilution are added to the front tube, 4 drops of the 1/60 dilution to the middle tube, and 4 drops of saline to the 3rd tube, this acting as a saline control. The tubes are shaken and placed in the water bath at 37°C. They are examined macroscopically or, if necessary, by the aid of a hand lens and as the reaction is in the nature of a flocculation the tubes should be inspected at regular intervals for the first appearance of the floccules. The entire test is completed in one day; the mixtures are made at 9 a.m. and they are washed from 12.15 p.m. to 12.45 p.m., after which the anti-human is added. The first positive signs are usually visible after 1 hour and the final result can be seen after a further 2 hours. No improvement has been found by leaving the tubes in the water-bath overnight although this is usually done for convenience and a final check. Controls are included with every batch of tests. Considerable experience is needed in the interpretation of the results, which we have found useful to classify as weak, moderate and strong; it is recommended that weak reactions be confirmed and compared at a later date.

RESULTS

The results obtained in 2,393 consecutive investigations are shown in Table I. It will be seen that 5.0% of the random population tested possess incomplete antibodies against brucellosis as compared with 20.6% of the patients in whom practitioners considered it necessary to confirm or exclude

TABLE I. RESULTS OF MODIFIED COOMBS TEST FOR BRUCELLOSIS OVER A PERIOD OF 3 YEARS

Provisional Diagnosis	*Europeans*		*Natives*		*Total*	
	Positive	*Negative*	*Positive*	*Negative*	*Positive*	*% Positive*
Arthritis	41	131	39	138	80	22·9
Acute rheumatism	1	34	3	21	4	7·0
Brucellosis	44	138	17	47	61	24·8
PUO	64	249	25	142	89	18·5
Backache	13	4	1	2	14	70·0
Pneumonitis	4	9	1	3	5	19·4
Cardiac	4	4	0	1	4	44·0
Anaemia	9	13	2	12	11	30·5
Adenitis	8	20	1	6	9	25·8
Hepatosplenomegaly	7	21	1	8	8	21·6
Intestinal	5	24	4	11	9	20·4
Ocular	4	2	—	—	4	—
Hepatitis	3	7	3	3	6	37·5
CNS	2	18	—	—	2	10·0
Bone	4	15	4	5	8	28·5
Tuberculosis	6	3	0	2	6	54·5
No diagnosis given	94	535	24	60	118	16·5
Totals	313	1,224	125	461	438	20·6
Random controls	4	146	11	139	15	5·0

brucella infection. The positive rate among random European controls is 2.6% as compared with 7.3% among random Natives and the value of a positive result in the latter is correspondingly reduced. Figures relating to some of the individual provisional diagnoses are worthy of comment:

'*Brucellosis.*' It is not sufficiently appreciated that a provisional diagnosis such as brucellosis or, worse still, brucellosis, conveys no information to the clinical pathologist; reference to one or more symptoms, signs or systems would be much more informative. However, where this provisional diagnosis was given about 25% of the sera gave a positive screen test.

'*Arthritis.*' Over 23% of the investigations were positive and frequently the difficult problem arises whether the condition is rheumatoid arthritis or an arthritic manifestation of brucellosis. An important practical point is the advisability of carrying out both a Coombs test for brucellosis and a Rose test for rheumatoid arthritis. The results obtained in 293 cases where both tests were asked for is shown in Table II. It is generally conceded that the differential sheep-cell

TABLE II. COMPARATIVE RESULTS OF THE ROSE TEST AND MODIFIED COOMBS TEST IN 'ARTHRITIS'

Rose Neg. Coombs Pos.	*Rose Pos. Coombs Neg.*	*Rose Pos. Coombs Pos.*	*Rose Neg. Coombs Neg.*
58	27	5	203

agglutination test for rheumatoid arthritis has a high degree of specificity and will detect about 80% of cases. It is particularly interesting therefore that in only 5 instances were the Rose test and the modified Coombs test both positive in the same patient. It is important to distinguish rheumatoid arthritis from brucellosis in children but it is unfortunate that in young patients the Rose test is often negative, even in Still's disease. Probably the best practical approach to the problem is appreciation of the fact that rheumatoid arthritis is relatively uncommon in children and, contrary to the usual belief, that brucellosis is more common than is generally supposed. It has been calculated (Gauchat and May[8]) that 1,200 (3 per 100,000) new cases of rheumatoid arthritis occur per year in the American child population and, if a similar frequency holds good for South Africa, one would not expect to see more than about 30 new cases per year in the European under-15 child population of the Union. It is interesting that, although the numbers are not large, the percentage of cases of acute rheumatism giving a positive Coombs test for brucellosis is not significantly different from that in the random population.

'*Backache.*' Almost three-quarters of the cases of backache gave a positive reaction; this result, surprising at first sight, fits in with the liability of brucellosis to involve bones and joints. Hodgkinson[9] in describing a case of brucellosis of the lumbar spine emphasizes that brucellosis as a cause of backache should always be considered. Emik *et al*[10] in a valuable analysis of brucella patients in Indiana over a 5-year period describe a 5-symptom complex in which backache was noted in over 55%—about the same as night sweats and exceeded in frequency only by weakness (the most prominent symptom), evening rise in temperature, chills and headache. Arthritis was present in about 18% of the patients.

'*PUO.*' This diagnosis, with in many cases a history of sweats, weakness and vague ill-health accounted for over 18% positives. The interpretation of the result would depend to a great extent on the exact history and the combination and duration of the accompanying symptoms and signs.

'*Miscellaneous.*' The numbers in the miscellaneous group are not sufficiently large to warrant firm conclusions being drawn about any individual condition. However, the wide scope of the list is a tribute to the protean nature of the manifestations of brucella infection. Of particular interest are the ocular, pulmonary and hepatic conditions in which antibodies were demonstrable. An important finding was the positive result in 5 cases of suspected tuberculosis; in this connexion it should be remembered that brucellosis can give rise to lesions difficult to distinguish from tuberculosis and in one recorded case a kidney was removed before the brucella aetiology became apparent (Abernethy *et al*.[11]). In this connexion an interesting Rhodesian case of chronic brucella pyelonephritis with calcification has recently been described by Honey, Gelfand and Myers [12] and they also stressed the close similarity between renal brucellosis and renal tuberculosis.

DISCUSSION

Brucellosis, especially the chronic form, is not a clinical diagnosis; the clinician requires laboratory confirmation and it will be generally conceded that with existing tests such confirmation is rarely forthcoming. Consequently, as stated previously, brucellosis is often considered to be an uncommon condition, especially in children, whereas in fact it is very common, being endemic in some parts of South Africa and a cause of much chronic ill-health (S.A.I.M.R. Annual Report, 1956, p. 43). Wallis[13] in his paper on brucellosis in children has summarized the problem very aptly as follows: 'Brucellosis is a disease of mistakes. If we do not think of it, we miss it; or we may think of it and test for it, yet find nothing. It eludes us.' There must be some explanation for

this elusiveness and it is logical to assume *inter alia* that the existing techniques are deficient since they take no cognisance of incomplete antibodies and therefore fail to detect a considerable proportion of cases. Positive blood cultures are disappointingly infrequent and in any case may need weeks before an opinion can be given. Positive skin tests show that the patient has been exposed to brucella infection and their chief value probably lies in the diagnostic significance of the appearance of agglutinins or a rise in agglutinin titre after a skin test has been carried out. The classical saline agglutination reaction is also of limited usefulness; after half a century there is still no unanimity of opinion about temperature, time and other technical details, whilst the attempt to define a so-called 'diagnostic' titre is obviously fallacious. No claim for any considerable degree of accuracy can be made for routine agglutination reactions, so that anything less than a spectacular difference in titre means little. More important, however, is the fact that the saline agglutination reaction will not detect the incomplete antibodies and the two tests should be complementary to one another, as they are, for example, in the investigation of rhesus sensitization. The usual saline agglutination test should be done and if this is negative, the antiglobulin reaction should be carried out on the same mixture. Whether one uses the one-tube technique described in this paper or a full-scale titration or, possibly, albumin or enzyme techniques, will depend on personal preference and future research. There can be no doubt, however, that incomplete antibodies should be tested for not only in suspected brucellosis but in other conditions where agglutinins are relied on as an aid to diagnosis.

One is constantly being asked about the degree of specificity of the antiglobulin test for brucellosis; no categorical answer can be given because few if any laboratory tests depending on an antigen-antibody reaction can be specific for any one disease. In the light of the information afforded by the present investigation one can say that, with the technique employed, about 5% of the random population will give a positive indirect Coombs test for brucellosis, although the figure for Europeans is less than 3% and for Natives over 7%. This means that they have been exposed either to brucellosis or an antigen of a similar structure; it is known, for example, that immunization with cholera vaccine may lead to the production of agglutinins against brucella. The results obtained suggest that there may be some cross action with tuberculosis and in one case a strongly positvie brucella Coombs reaction was obtained in a patient in whom subsequently a positive blood culture for typhoid was obtained (Dr. I. J. Grek, personal communication).

The actual interpretation to be placed on a positive modified Coombs test differs in no respect from the interpretation to be placed on a saline agglutinin result, a positive skin test, or any other investigation short of a positive blood culture. It means that the patient has, or has had, brucellosis, which a negative result would almost certainly exclude. This makes it as valuable in brucellosis as the TPI test is in syphilis; the ultimate decision whether the disease is active or not must be made by the clinician. The evaluation of any laboratory test depends on its clinical usefulness and whether it affords information which has hitherto been lacking. These questions can only be answered by the clinicians, and it is hoped that our results collected during the past 3 years will help to stimulate interest and further research into the role of incomplete antibodies in bacterial diseases.

SUMMARY

A one-tube screen test for incomplete brucellar antibodies is described.

The results obtained in over 2,000 consecutive tests are classified according to the provisional diagnosis.

A plea is made for further research into incomplete antibodies in all bacterial conditions in which saline agglutination tests are at present carried out.

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THE MENTAL HOSPITAL AND THE COMMUNITY*

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HISTORICAL

In general it is accurate to state that psychiatry in South Africa has closely followed the European pattern with a time lag roughly corresponding with the rapidity of communication between the two continents. Thus during the 17th and 18th centuries, in the days of the sailing ships, the Dutch settlers at the Cape still treated the insane on the assumption that they were possessed by evil spirits, and the reforms introduced by Pinel in France during the revolutionary period took many years to reach us here.

During the period the Cape was governed by the Dutch East India Company, the European population was small, and most of the cases of insanity occurred among passing seamen, often due to exposure, dietary insufficiency and excessive alcohol, to which they were addicted. Special accommodation for these cases was mentioned in a report to the Hospital Commissioners[1] dated 17 February, 1710. They recommended the erection of 'a small enclosed apartment for locking up the mad who are now and then found in the Hospital'.

Lunatics were also detained in the Slave Lodge, which stood on the site now occupied by the Old Supreme Court Building at the upper end of Adderley Street. Thus a Resolution of the Governor and Council[2] dated 11 December, 1725, reads: 'Maria Nantas' husband is a dangerous lunatic. She begs the Council to take steps to confine him, and he is to be placed in a small room in the Slave Lodge. His wife and friends to pay for his keep.' Lunatics were also detained with safety on Robben Island from the early days of the Dutch occupation of the Cape, along with criminals and political exiles, and on 19 June, 1723, a lunatic, Willem Wilkens is reported[3] as having wounded a person on Robben Island. He had 'some years ago in the hospital here, while in a state of frenzy, killed a man lying in bed next to him, and wounded others'.

* An address delivered to the S.A. National Council of Women, Queenstown, 12 March 1958.

A properly constructed lunatic asylum was eventually opened on the island in 1846. Before this, special wards for mental patients had been erected at Cape Town as part of the Old Somerset Hospital, opened in 1818 by Dr. Samuel Bailey, although the conditions under which they were housed left much to be desired.

At later periods in the 19th century other mental hospitals were opened at Grahamstown (1875), Port Alfred (1889), Valkenberg (1891) and Fort Beaufort (1894). The Queenstown Mental Hospital, now renamed the Komani Hospital, was opened in 1922, and was the first modern institution in the Cape to be specially designed for housing mental patients, the others having been converted prisons, military barracks, etc. Valkenberg was also specially built for the purpose of housing mental patients but too long ago to be taken into account in this context. The first physician-superintendent at Queenstown was Dr. F. D. Crosthwaite (1922-1928).

The reforms in mental hospital administration which we owe mainly to Philippe Pinel of France, began in 1792, and gradually during the 19th century spread over the whole civilised world, including South Africa. These reforms in essence introduced a more humanitarian approach to the treatment of the insane, and did away with the chains, bolts, shackles and straitjackets in which they had for centuries been confined. All this was, of course, of vital importance to the well-being of the patients, and improved their lot immeasurably, but it had no real effect on the medical treatment of the insane which remained in essence custodial throughout this period. Medical treatment consisted merely in the treatment of symptoms. Thus an excited patient was given sedatives or sleeping draughts, his appetite was stimulated by digestives, his anaemia was treated with iron tonics, etc., but no specific treatment was known which directly attacked the mental illness itself.

THE PERIOD OF ACTIVE TREATMENT

We had to wait until 1936 before this phase began with the development of insulin treatment by Manfred Sakel and cardiazol shock treatment by Von Meduna. These advances ushered in a period in which the mental illness itself was attacked directly with considerable success. Electro-shock, electro-coma, and pre-frontal leucotomy are all phases of this epoch which have utterly transformed the outlook for the patient suffering from mental disease. But what is almost equally important, the doctor's outlook on mental disease has been changed just as radically. He now no longer has to stand by with folded arms waiting for the disease to get better or worse, he can do something active to speed up recovery. As a result the atmosphere of the mental hospital has been entirely transformed, and what were previously places where all who entered might have been quite justifiably adjured to abandon hope, are now full of cheerful doctors and nurses and hopeful patients who confidently expect to recover from their illness within a relatively short period—and in very many cases do indeed so recover.

During the last few years the psychiatrist has been given another potent weapon in the shape of the tranquillizing drugs, which though not able to cure many cases of mental disease, are valuable in controlling and modifying many of its worst features, and have turned what were previously the most disturbed wards in the hospital into havens of peace and quiet.

THE CONCEPT OF REHABILITATION

While a high proportion of the admissions to our mental hospitals can thus look forward to a rapid recovery with the aid of modern methods of treatment, it does however remain true to say that a proportion of them will not get well enough to go out in spite of receiving the best possible medical treatment.

Some of these are patients who by the very nature of their ailment can hardly be expected to recover. As an example one may mention the elderly patient who comes into the mental hospital with a senile psychosis due to organic changes in the brain brought on by old age. Because of the increased expectation of life in modern times, far more people than formerly survive into this age group and eventually are placed in a mental hospital.

A more important and more tragic group is made up of the people suffering from schizophrenia. This disease attacks young people, just when they reach the stage of becoming useful and productive citizens, and it not infrequently attacks young men and women with brilliant mental powers who would have become valuable assets to the community. This is the commonest of all forms of mental disorder, and over one half of the admissions to mental hospitals suffer from this disease.

The outlook for those attacked was gloomy indeed 25 years ago, and only about 30 out of every 100 could expect to leave hospital again. This figure has been more than doubled by modern methods of treatment; nevertheless there still remain a considerable residue of schizophrenics (perhaps 30 out of every 100) who will never get well enough to leave hospital permanently or to maintain themselves in the community in the economic sphere.

This is the reason why all our mental hospitals gradually fill up with incurable cases—we admit more than we discharge, so that over a period of years more and more wards are filled with these uncured schizophrenics. In any mental hospital they probably comprise two-thirds of the patient population at any given time and thus far they have proved resistant to all forms of medical treatment. They are essentially our therapeutic failures. Until recently they used to be hidden in the 'chronic' wards, which were the poorest staffed and equipped. Visitors were usually discouraged, and were preferably taken to the acute or admission wards where everything was bright, cheerful and gay. It is only in recent years that serious attempts have been made to deal with this neglected section of the hospital population.

Even among those patients who do leave hospital there are a considerable number whose recovery can only be described as relative, in that they show no active symptoms of disease. They do in many cases show some residual signs, and the illness has definitely left its mark on them. They are simply not the people they were before their attack, either in intellectual capacity or in their social adaptability. Thus a young man who had a brilliant career at a South African university, obtained high honours in mathematics, won a scholarship to Cambridge, and there broke down with schizophrenia, had to spend 2 years in mental hospitals and was eventually discharged as recovered. He had to be content with a teaching post at a secondary school, and to abandon what might have been a brilliant scientific career.

If one observes a large number of these cases over a considerable period of time one notices that many of those which fail to respond to treatment do not continue to deteriorate progressively for the rest of their lives. Their disease is arrested spontaneously after 3, 4 or more years, their illness 'burns itself out'. The mental symptoms either disappear entirely or else become so modified as not any longer to impose a serious handicap on the patient; they are more of a nuisance than a real disability, and the patient learns to ignore them. Unfortunately by that time the patient has become so habituated to mental hospital life, has so 'deteriorated,' that he has neither the desire nor the ability to face life outside and he frequently resists strongly any effort to discharge him. If he does try life outside he finds adaptation so difficult that he is only too happy to return to the shelter of the hospital.

Perhaps the outstanding feature of mental hospital life from the patient's point of view, is the fact that it is entirely self-contained and self-sufficient. Everything the patient needs is provided and he does not have to make even the simplest effort or decision. All his thinking is done for him. This is very valuable during the active stages of his illness, for one of the characteristics of sufferers from mental illness is their inability to make decisions. If prolonged unnecessarily, this state of affairs becomes a danger which insidiously undermines all the patient's will-power and initiative and even if the original disease should come to an end, leaves him merely the husk of the man he was previously.

It is towards the prevention of this state of affairs and to its cure in those cases where it has been allowed to develop, that the most modern concept of treatment is directed in mental hospitals. This aspect has gripped the imagination of some of the most forward looking psychiatrists, particularly in England. The outstanding exponent of this viewpoint is probably Dr. T. P. Rees,[4] until recently Medical Superintendent of Warlingham Park Hospital, which he has made world famous for rehabilitative psychiatry. The essence of his therapeutic philosophy is that every minute of the mental patient's day should be used therapeutically, and that every single activity in the hospital should be therapeutically orientated; that it should aim at having curative influences. Medical treatment, whether it be electrical, insulin, or drugs, thus only forms part of the total concept of treatment at Warlingham Park, and the rehabilitative aspect, including the prevention of deterioration, is considered of even greater importance than the medical.

REHABILITATION MEASURES

Of all the influences which hasten deterioration in mental patients, perhaps the most potent one is the loss of contact with the world outside, This includes separation from family ties, absence of loved ones, deprivation of opportunity for work, social activities, cultural activities, and even such common day to day acts as shopping and reading newspapers, which we perform almost subconsciously, but which nevertheless help powerfully to keep us in contact with the world around us.

At Warlingham Park[5] determined efforts have been made to replace these losses, and a recently opened social centre provides a replica of a village square with a shop, post-office, recreation-room, library, etc., all helping to 'normalize' life for the patients.

A very important curative activity for a mental patient is work and the concept of 'occupational therapy' is of course an old one. But there is a considerable difference between occupational therapy and work in the ordinary sense of the term and a great deal could be done to approximate the one to the other. One way of doing this is by making patients produce articles as part of an industrial set-up—in fact bringing the factory to the mental hospital. This entails payment for work done, team work between groups of patients, work during set hours in a place specially set aside for this purpose, and the system differs markedly from the *laissez faire* outlook which usually reigns in the occupational therapy department, where the patient has little or no interest in the result of his labours, and no real incentive to work.

In an experiment on the lines described above at the Umgeni Waterfall Institution, Howick, conducted in 1956 with the co-operation of the South African Rubber Manufacturing Company, a branch workshop was opened at the Institution. The patients, mental defectives of all grades, were given the task of packing rubber rings, used for sealing jamjars, into cartons, and were paid by piece-work. They were first taught their task by the Company's instructors, and after this preliminary period worked singly or in groups of 2, 3, or 4, according to their inclinations and temperament, some doing best on their own, while others preferred a division of labour. The patients varied from low grade imbeciles to high grade defectives, and for those who could not count a special counting board was constructed with twelve raised wooden circular blocks, so that all the patient had to do was to put a rubber ring on each of these and then place them in the carton, which took 12 rings. Even the blind were catered for by a special board with a raised solid wooden cylinder on it. When the rubber rings were placed on this and reached the level of the top of the cylinder they numbered exactly 12.

It was found that the speed and accuracy of the patientswork' could not be correlated with their intelligence, and the best and most reliable workers were frequently the placid medium-grade imbeciles rather than the higher grade patients. The former easily earned themselves £2-£3 per month pocket money for about four hours work per day. There is no reason why this type of experiment should not be extended to our mental hospitals with the most beneficial results to the patients, and some relief of the acute labour shortage in industry.

The rehabilitation of deteriorated patients and the prevention of the onset of deterioration should thus be a most important part of the therapeutic programme of any mental hospital which professes to practise the modern techniques, but I regret to say that we in South Africa have not progressed as far as we might have done along these lines. For far too long our mental hospitals, whose standards of medical treatment compare favourably with those in any part of the world, have failed to provide adequate rehabilitative facilities, and have existed in isolation, largely cut off from the communities around them, those communities whose co-operation is vital in any rehabilitative programme. I myself have always been a keen protagonist of co-operation between the mental hospital and the community in which it is set, and in my experience the community has always responded enthusiastically whenever any demands on it have been made by a mental hospital in its area.

Thus in 1952 at the Sterkfontein Hospital, Krugersdorp, I approached the Municipal Library and obtained its ready agreement to start a branch service at the hospital. This service is still in existence and provides the patients with all the books they can read—to the number of many thousands per annum. The Queenstown Public Library has already agreed to begin a similar service at the Komani Hospital in the near future.

At the Umgeni Waterfall Institution in 1955 I persuaded a number of enthusiastic people, mainly from Durban, to start a group we called the Friends of the Umgeni Institution, whose aim was to provide links with the outside world for the patients. This body did an enormous amount of good. They gave the patients a monthly party which was looked forward to as the high-light of the Institution's life, they made friends with individual patients, visited them when ill, sent personal reports about them to parents living hundreds of miles away, and in general provided that missing element of personal affection which no hospital, however good can entirely supply, and which plays so vital a part in any individual's happiness and mental well-being. On the practical side they brought patients little personal gifts, equipped a modern hair-dressing saloon for them, provided special tools for the occupational therapy department, and each Christmas gave a huge annual party which was attended by parents from all over the country. The change they effected was quite remarkable and could be felt by everybody. Escapes became rarities, patients' behaviour improved out of all recognition, and the Institution radiated an atmosphere of happiness which could be felt by the most casual visitor.

I now wish to appeal to the National Council of Women, a body which has always taken a keen interest in mental health, to take the initiative in founding a similar organisation to the one just described, at Queenstown. Its aim should be to help to approximate life at Komani Hospital as closely as possible to life in the world outside, and thus to prevent that insidious deterioration which is the most potent factor preventing the return of our patients to normal life.

The biggest loss a patient suffers by prolonged detention is the loss of the love of his fellow men. Many even lose touch with their own families. It is a sad fact that families tend to forget about relatives suffering from mental illness after a time, and one notices time and again that those patients who feel assured of continued affection and persistance of home ties tend to recover better, even after years of illness. Then there is the loss of the intellectual stimulus of contact with normal people, and the loss of initiative. After a time the patients become so habituated to the institutional type of existence that they fear to face life outside. Deterioration is also hastened by absence of the powerful incentive of having to earn one's living.

We at Komani do our best by providing Occupational Therapy of various kinds, although we are handicapped by the European patients' objection to doing certain rypes of manual work which would keep many of them constructively occupied and at the same time improve our hospital and its grounds.

We have recreational facilities like cinema shows, dances and games for our patients, as well as a well-equipped tuck shop. More recently we have founded a patient's club which is run by patients for patients, and which provides many forms of additional amenities.

To expand all these and to provide additional facilities the support of the local community is essential, and my appeal is both on the grounds of humanity and of enlightened self-interest. Our hospital is a considerable asset to the Queenstown Community, and even if regarded purely in terms of money, it pays out £10,000 in wages and salaries each month, a large part of which is spent locally. But I do not wish to stress that side, as my experience in the past has been that people are only too ready to help once the need has been made clear to them.

SUGGESTED NEW SOCIETY

What I wish to suggest is the formation of a broadly based body in Queenstown to include representatives of all the main elements in the community, and embracing such social agencies as the National Council of Women, Die Vrouefederasie, Church bodies, Toc H, Rotary, Round Table, etc. In addition interested persons in their individual capacities could of course also join. This body could be called the Friends of the Komani Hospital (or any other suitable name), and its main functions would be:—

1. Cultivation of personal contacts with individual patients, to fill that void in their lives caused by the absence of their families and loved ones.

2. To co-operate with the patients' club already in existence to provide additional recreational amenities e.g. musical entertainment at patients' parties, lectures on topical subjects, debates with patients on matters of interest, etc.

3. To provide facilities for work outside the Hospital for patients fit for it. There are a number of patients fit for work

outside whose relatives are unable to provide a home for them. By a recent decision of the Commissioner for Mental Hygiene such patients can continue to reside in the hospital while going out to work daily. They will be treated as non-paying patients and can thus retain all their earnings. This is a most valuable stage in the rehabilitation of a patient in certain cases, as a preliminary to final discharge.

4. To provide facilities for other activities outside the hospital, such as attendance at the patients' normal place of worship, visits to town for shopping, concerts, sporting functions, etc.

When sufficient public interest has been aroused, it is hoped to call a public meeting for the organization of such a body, but in the meanwhile I hope you will all give this matter your urgent consideration, and discuss it widely with your friends. In time I hope that Queenstown will pioneer a type of social service which will bring all its citizens untold satisfaction, and set an example which will be followed by all those communities with a mental hospital in their midst.

I am gratefull to Dr. I. R. Vermooten, Commissioner for Mental Hygiene, for permission to publish this paper.

REFERENCES

1. Minde, M. (1937): *In Search of Happiness—An Approach to Mental Hygiene*, p. 14. London, Frederick Muller.
2. *Ibid*, p. 15.
3. Leibbrandt, H. C. V., *Précis of the Cape Archives*, Journal 1699-1732, p. 294.
4. Rees, T. P. and Whiteley, J. S. (1957): Brit. J. Clin. Prac., p. 275.
5. Editorial, Lancet (1957): **2**, 1156.

ASSOCIATION NEWS : VERENIGINGNUUS

CAPE WESTERN BRANCH : TAK WESKAAPLAND

The following items of general interst were discussed at a meeting of the Branch Council of the Cape Western Branch held at Cape Town on 20 June 1958:

Insurance Societies: Application of Medical Aid Tariff

Attention was drawn to the fact that certain insurance companies who are now administering medical-aid insurance are endeavouring to undermine the basis on which medical-aid practice is recognized by the Association. The matter will be given further consideration, and meanwhile the attention of all doctors is drawn to a communication from the Executive Committee of the Cape Western Sub-group of the National General Practitioners' Group which appeared on page 631 of the *Journal* of 21 June.

Beoogde Afdeling Namaqualand van die Tak Wes-Kaapland

Dit is reeds 'n geruime tyd bekend dat lede wat in hierdie gebied van Wes-Kaapland praktiseer, die enigste is wat nog nie 'n plaaslike afdeling van die Vereniging van hul eie het nie. Briewe wat onlangs ontvang is van individuele praktisyns in dié gebied, en waarin hulle hulle raad vra in verband met hulle probleme, het dit des te meer duidelik gemaak dat dit wenslik is dat so 'n Afdeling in die lewe geroep behoort te word, en oorweging word hieraan geskenk.

Western Province Building and Allied Trades Sick Fund

A letter was received from this Fund expressing concern about the excessive cost of drugs and medicines supplied to members of the Fund and suggested the appointment of a Joint Advisory Committee consisting of representatives of the panel doctors, of the Pharmaceutical Society and of the Executive of the Fund. The assistance of the Branch was sought. It was decided that 2 representatives from the Contract Practice Committee should be appointed to assist this Sick Fund with their problems.

Non-pauper Patients at Closed Hospitals

The main discussion of the evening centred on a motion requesting a joint discussion between the Universities with medical schools, the Provincial Hospital Administration and the Medical Association on the problems associated with the treatment at closed hospitals of patients able to afford private medical attention. An *ad hoc* Committee was appointed to go into the matter.

MEMORANDUM RE MEDICAL CERTIFICATION : ETHICAL RULE 16

PREPARED BY DR. P. D. COMBRINK, ASSISTANT SECRETARY (TRANSVAAL) AT THE REQUEST OF THE PARLIAMENTARY COMMITTEE

It has been brought to the notice of the Parliamentary Committee that many medical practitioners are concerned about the interpretation of ethical rule 16 of the South African Medical and Dental Council, which relates to the observance of secrecy when issuing medical certificates.

At its meeting held on 16 June 1958 the Committee resolved that the following outline of the history of the action taken by the Medical Association in regard to this rule be published in the *Journal* for the general information of members.

1. On 14 May 1957 the following letter was addressed to the Registrar of the South African Medical Council by the Assistant Secretary (Transvaal):

'At its meeting held on 6 May 1957, the Parliamentary Committee decided to recommend to the special *ad hoc* committee of your Council when it meets them on 6 June, that a certificate similar to those issued by the Mines Benefit Society should be the normal form of certification. In this the doctor would not give any information concerning the nature of the ailment of the patient. In addition, it is suggested that there should be a second certificate in which the nature of the ailment is disclosed, but this should be addressed to the patient only and should be handed to him so that he might take any action that he thinks fit.'

2. When the Parliamentary Committee met the *ad hoc* committee of the Medical Council on 6 June 1957, discussion took place on the various practical difficulties which could be experienced by the absolute application of the rule on the part of the profession, and the chairman of the Council's *ad hoc* committee requested the Association to draw up an explanatory memorandum on this recommendation, as discussed at the meeting, for submission to the full Council.

3. On 18 June 1957 the following letter was addressed to the Registrar of the Medical Council by the Assistant Secretary (Transvaal):

'You will remember that after the discussion on ethical rule 16 on the 6th instant, the chairman of your special *ad hoc* committee requested that the Medical Association should draw up an explanatory memorandum on its recommendation, as then discussed, for submission to your Council.

After further discussion on the matter at a meeting of the Parliamentary Committee of the Association held last night, I was instructed to forward to you the attached memorandum.

"*Memorandum by the Medical Association of S.A. on Ethical Rule* 16

The Association is of the opinion that any change in rule 16 should be in the direction of assisting the doctor to observe professional secrecy.

In the issuing of medical certificates the profession recognizes certain problems. These could be enumerated as follows:

(*a*) Various medical benefit societies require a diagnosis of illness before they will pay benefits. They also require a medical examination prior to admission to membership and may preclude certain pre-existing illnesses in making payments. Some employers require the posting direct to themselves of medical certificates including the diagnosis.

(*b*) In industrial medicine an employer may wish information concerning the nature of an employee's sickness in order to know whether environmental or industrial conditions are of influence in absenteeism. Further, employers may require a medical examination periodically in order to protect the health of the employee or to ensure that employees are medically fit to do certain work.

(*c*) Employers generally may require a diagnosis of illness

before they will grant sick leave. In an attempt to guard against abuse the employer will refuse sick leave if the diagnosis includes certain vague terminology.

The Association is of the opinion that the onus should not be on the doctor to disclose the diagnosis in any illness. They recognize that there is no objection to this being done providing the explicit consent of the patient has been obtained. They propose that this be put into effect as follows:

(*a*) A medical certificate to a third person shall not ordinarily disclose a diagnosis.

(*b*) A medical certificate disclosing a diagnosis may be given to a patient provided that the full implications of such certificate have been explained to the patient.

(*c*) Any medical certificate or report may be handed to a third person with the written consent of the patient; such consent to be obtained at the time when the certificate is issued."'

4. On 16 April 1958 the following letter was addressed to the Assistant Secretary (Transvaal) by the Registrar of the Medical Council:

'I beg to refer you to previous correspondence in regard to the Council's Ethical Rule No. 16. Please see your letter of 18 June 1957 and your letter of 14 May 1957, in addition to further correspondence.

The matter was in due course carefully considered by the Executive Committee of my Council after it had considered the report of a special *ad hoc* committee appointed by the Council to consider rule 16. The Executive Committee submitted a copy of the report of the special *ad hoc* committee to Council at its last meeting together with its own recommendation.

The Council has now directed me to inform you that if medical practitioners adopt the procedure outlined in your letter of 14 May 1957, and issue a certificate as per the annexure thereto (being a certificate in use by the Mines Benefit Society numbered Chamber Form 144), they will not be acting contrary to rule 16 of the Council's Ethical Rules.'

5. *Certificate in use by the Mines Benefit Society* (*Chamber Form* 144):

CHAMBER FORM 144

FINAL MEDICAL CERTIFICATE

I certify that .....

P.F. No. ..... employed by .....

.....

whom I first saw and examined on the .....

and have since examined on the .....

will be fit to return to duty on .....

Doctor's Signature .....

Date .....

(Carbon Copy to be retained by Doctor)

CHAMBER FORM 144

PRELIMINARY OR INTERMEDIATE MEDICAL CERTIFICATE

I certify that on the ..... 195....., I saw and examined .....
P.F. No. .....
employed by .....
and am satisfied, as the result of that examination, that he is suffering from injury/illness and is thereby incapacitated from work.

He has been told that he should be examined again not later than ..... 195.....* at which date this certificate lapses.
(Disablement is likely to continue for ..... days from today.)
Date: .....

Signature of Doctor.

* **NOTE:** If the employee does not resume work not later than the day following this day he must obtain from his panel-doctor and lodge with his employer a further certificate.

HONORARY TREASURER'S SPECIAL FUND : ERE-PENNINGMEESTER SE SPESIALE FONDS

The following donations are gratefully acknowledged : Met hartlike dank word die volgende skenkings erken

	£	s.	d.
Dr. M. E. Pimstone, Cape Town	2	2	0
Dr. J. P. de Villiers, Cape Town	2	2	0
Dr. H. Berelowitz, Cape Town	3	3	0
Dr. D. Douglas-Henry, Fish Hoek	2	2	0
Dr. O. H. Sennett, Sea Point	5	5	0
Dr. L. Tomory, Claremont	5	5	0
Dr. V. Brink, Cape Town	4	4	0
Dr. L. Ruskin, Salt River	3	3	0
Dr. S. W. Stoch, Paarl	1	1	0
Dr. S. V. Potgieter, Bellville	1	1	0
Dr. G. H. Allibone, Bloemfontein	2	2	0
Dr. I. E. Kenmuir, Kenilworth	2	2	0
Dr. I. Hirschfield, Bloemfontein	2	0	0
Dr. S. Gordon, Johannesburg	2	2	0
Dr. A. I. Friedmann, Johannesburg	5	5	0
Dr. J. P. S. McConnell, Sea Point	4	4	0
Dr. L. Vogelpoel, Cape Town	5	0	0
Dr. R. D. H. Baigrie, Cape Town	5	5	0
Dr. J. Labia, Wynberg	5	5	0
Drs. M. A. Robertson, T. R. McChesney and C. M. Kroon, Port Elizabeth	6	6	0
Dr. J. C. Pieterse, Springs	3	3	0
Drs. P. Connan and J. P. Theron, Bloemfontein	10	10	0
Mr. W. Grundill, F.R.C.S., Bloemfontein	5	0	0
Dr. L. McGregor, Johannesburg	5	5	0
Dr. L. S. Robertson, Johannesburg	5	5	0
Dr. A. W. Sichel, Cape Town	5	5	0
Dr. A. H. Tonkin, M.A.S.A.	5	5	0
Anonieme Skenkings, Johannesburg	4	0	0
Dr. D. P. Beck, Port Elizabeth	2	2	0
Dr. G. E. Mearns, Odendaalsrus	2	2	0
Dr. H. Hallatt, Petrusburg	10	10	0
Dr. K. F. Mills, Johannesburg	5	5	0
Dr. V. F. Fox, Bergvliet	2	2	0
Dr. D. M. Brebner, Johannesburg	3	3	0
Dr. W. Grusiner, Pretoria	5	5	0
Dr. R. C. T. Pearson, Johannesburg	2	2	0
Drs. Shore, Rabkin and Jaffe, Cape Town	3	3	0
Dr. G. B. Barlow, Cape Town	2	2	0
Dr. M. L. Mundy, Durban	5	5	0
Dr. I. Robertson, Claremont	2	2	0
Dr. A. J. Loubser, Krugersdorp	2	2	0
Dr. J. A. Currie, Cape Town	5	5	0
Dr. A. J. Orenstein, Johannesburg	5	0	0
Dr. L. B. Gottlieb, Johannesburg	5	5	0
Dr. G. J. Cillié, Waterval Boven	5	5	0
Dr. H. D. van Schalkwyk, Bethlehem	2	2	0
Dr. A. J. Louw, Middelburg, C.P.	10	10	0
Dr. J. A. B. Strydom, Wesselsbron	10	0	0
Dr. A. J. Ballantine, East London	4	4	0
Mr. J. M. Hoffman, F.R.C.S., Port Elizabeth	5	0	0
Dr. L. I. Braun, Johannesburg	5	0	0
Total as at 30 June 1958 / Totaal tot op 30 Junie 1958	£217	8	0

PASSING EVENTS : IN DIE VERBYGAAN

Dr. D. Ordman of the South African Institute for Medical Research, Johannesburg, will speak on 'Climate Asthma and the Emergence of a Universal Premise of its Aetiology' on Wednesday 16 July at 12 noon in the Falconer Theatre, Groote Schuur Hospital, Cape Town. All practitioners and senior students welcome.

* * *

Dr. H. H. Bloch, M.B., Ch.B. (Cape Town), D.M.R.D. (R.C.P. & S. Eng.) has become a partner in the Radiological practice of Drs. B. Navid and J. K. McCabe at Tudor Court Medical Centre, St. Matthew's Road, East London. Telephone 6011.

Dr. H. H. Bloch, M.B., Ch.B. (Kaapstad), D.M.R.D. (R.C.P. & S. Eng.) het 'n vennoot geword in die radiologiese praktyk van Drs. B. Navid en J. K. McCabe te Tudorhof Mediese Sentrum, St. Matthewsweg, Oos-Londen. Telefoon 6011.

* * *

Mr. Cyril D. Kisner, M.B., Ch.B., Ch.M. (Rand), Urologist, has moved from 103 Lister Buildings, Jeppe Street, Johannesburg, to Suite 500/501 Medical Arts Building, Jeppe Street, Johannesburg. Telephones: Rooms 23-8200, residence 43-5300, emergency 22-4191.

Dr. Cyril D. Kisner, M.B., Ch.B., Ch.M. (Rand), Uroloog, het van Lister-gebou 103, Jeppestraat, Johannesburg, na Medical Arts-gebou, stel 500/501 Jeppestraat, Johannesburg getrek. Telefone: Spreekkamer 23-8200, woning 43-5300, noodgevalle 22-4191.

* * *

Prof. James T. Louw, Professor of obstetrics and gynaecology, University of Cape Town, who is attending the second world congress of the International Federation of Gynaecology and Obstetrics in Montreal, Canada, has been elected chairman of the first gynaecological session of 'Free communications'.

Professor Louw will be resuming his duties at the medical school on 7 July 1958.

Prof. James T. Louw, Professor van verloskunde en ginekologie, Universiteit van Kaapstad, wat die tweede wêreld-kongres van die Internasionale Federasie van Ginekologie en Verloskunde te Montreal, Kanada, bywoon, is gekies tot voorsitter van die eerste ginekologiese ‚ope sitting'.

Professor Louw sal sy dienste aan die mediese skool op 7 Julie 1958 hervat.

* * *

South African Cardiac Society. The programme of a meeting of the Cape Province section of this Society held at Groote Schuur Hospital, Cape Town on 19 June 1958, Dr. Maurice Nellen in the chair, was as follows: (1) ‚'n Moontlike geval van interventrikulare septale defek', by Prof. Andries Brink; (2) The racial incidence of hypertension and valvular heart disease in Cape Town, by Dr. V. Schrire; (3) Dr. Robert Slome and Dr. Louis Vogelpoel each presented a case of Woolf-Parkinson-White syndrome with unusual features; (4) A case of coronary heart disease in a man aged 60, with unusual paradoxical findings in the cardiograph, By Dr. V. Schrire. The chairman announced that the first national cardiac symposium is to be held in Johannesburg, on 25 and 26 July 1958. This symposium is to be called the 'Lederle Symposium' because this firm is covering the expenses. Members intending to be present should please contact their provincial section secretaries.

* * *

Mediese Adresboek—Knox-Uitgewersfirma. Op 'n onlangse vergadering van die Federale Raad is die vraag geopper of dit eties sou wees vir 'n geneesheer om besonderhede te verskaf soos aangevra vir insluiting in 'n mediese adresboek wat uitgegee sal word deur die Knox-uitgewersfirma in Durban. Hierdie saak is skynbaar aan die S.A. Mediese en Tandheelkundige Raad om 'n uitspraak voorgelê, en die Raad het saamgestem dat daar geen rede bestaan waarom die besonderhede nie verskaf sal word nie, ‚met dié voorbehoud dat die gegewens nie op so 'n manier aangebied word dat dit die persoon blootstel aan oortreding van die Raad se reëls nie, en meer in besonderheid sy reëls insake reklame'. Die Federale Raad het met hierdie uitspraak saamgestem; hulle het verder ook saamgestem ‚dat 'n kennisgewing in die *Tydskrif* geplaas kan word waarin dit aangetoon word dat dit nie oneties sou wees om die nodige besonderhede vir publikasie in die mediese adresboek te verskaf nie'.

* * *

Tape-Aids for the Blind is a charitable non-profit making organization which offers sound 'Tape-books' and 'Tape-magazines' to the blind of Southern Africa.

It will be greatly appreciated by the Organization if doctors will assist them to overcome one of their greatest difficulties—that of contacting the blind—with a view to having the names and addresses of Europeans who are blind, semi-blind or disabled in such a way as to make the normal use of the eyes extremely difficult, submitted to the organization.

The Organization is not interested in whether the blind can afford the equipment. They are interested to know whether the blind require their services and to enrol them as members (no subscriptions). The Organization hopes to supply those members who cannot afford the outlay, with a tape player free of charge as soon as their finances permit this.

Further information can be obtained from Tape-Aids for the Blind, 72 Kingston, 35 Park Street, Durban.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

SORBACEL

Westdene Products (Pty.) Ltd. announce that supplies are now available of Sorbacel, the new absorbable haemostatic gauze produced by Wanders of Switzerland.

To check bleeding which cannot be controlled by surgical means 3 kinds of absorbable material have been developed in the last 10 years—fibrin sponge soaked in thrombin, gelatin sponge and oxycellulose. The first 2 substances are absorbed relatively slowly with the production of granulation tissue and can therefore be used only in aseptic operations. Oxycellulose on the other hand is absorbed much more rapidly by the tissues and without any appreciable cell reaction. In its hitherto existing form however oxycellulose may also lead to tissue irritation due to its acid character. Furthermore, it inactivates thrombin and acid sensitive antibiotics such as penicillin and is not absorbed in suppurating tissues.

Sorbacel represents a further development of oxycellulose to a product which no longer exhibits the disadvantages of the original acid material. It is obtained by the oxidation of cotton gauze and the subsequent neutralization with calcium of the polyuronic acids formed. The calcium content of the preparation amounts to about 6%.

Sorbacel is ready to use and easy and simple to handle. It may be applied on its own or with thrombin and does not get sticky or slimy even when saturated. Its haemostatic effect is superior to gelatin sponge and to acid oxycellulose due to the presence of calcium. It is normally absorbed in a matter of a few days. Sorbacel does not cause tissue irritation and, unlike acid oxycellulose, promotes wound healings. It adheres intimately to the wound and, where required, may be applied with any antibiotic solution.

Sorbacel, which is blue in colour to distinguish it from ordinary gauze, is available in compresses 7 cm. × 7·5 cm. and strips 3 cm. × 1 metre. It is supplied sterile ready for use and may not be resterilized because the gauze is sensitive to heat. Sorbacel should be stored in a cool place.

Further information regarding Sorbacel may be obtained from the sole South African distributors, Westdene Products (Pty.) Ltd.

CORRESPONDENCE : BRIEWERUBRIEK

PARENTERAL MAGNESIUM SULPHATE THERAPY IN CORONARY DISEASE

To the Editor: The treatment of persistent and intractable angina is not very satisfactory. I do not think there is much enthusiasm for the value of the long-acting coronary vasodilators, antithyroid drugs or surgery. It is now nearly 2 years since Dr. Malkiel-Shapiro *et alii* published their paper on Magnesium Sulphate Therapy in Coronary Disease in *Medical Proceedings*. It has aroused considerable interest and even enthusiasm on the part of many doctors who have used it extensively. This interest is reflected by the letters which are now appearing in your correspondence columns, including Dr. H. Feldman's account of his conviction that his own angina benefited strikingly.

The work has, however, not gained acceptance in academic quarters—at any rate in Cape Town. As far as I am aware this attitude is not based on the result of any scientific trial of the treatment. To the best of my knowledge no work has been published refuting it. One of the reasons for the lukewarm reception in academic circles is the absence of any satisfactory theoretical basis for the treatment. Another is that it was not a controlled study, as the authors themselves fully admitted. Angina pectoris pursues such a variable course, and the psychogenic element is so important, that the evaluation of any form of therapy is fraught with the greatest difficulty in the vast majority of cases in which it is tried. In fact it is only in the few cases with a long and fairly constant history that any conclusions can be drawn of the effects of any medication. I have one such case and I feel the time is opportune to report it.

The patient, a doctor's father, was first seen by me in 1955 when he was 55 years of age. He gave a history of having had myocardial infarction in 1935 when aged 35. At that time he was treated by a very excellent G.P. and a consultant, and the diagnosis was established cardiographically. His ECG continued to be grossly abnormal, showing extensive ischaemic changes. He suffered from peripheral vascular disease, for which he has had extensive oral and parenteral medication. He is not hypertensive or diabetic. He was extremely troubled by persistent angina on exertion, and particularly on exposure to cold. Even a cold drink would produce it. He was a bad sleeper and would often wake 3 or 4 times at night. On waking he would experience the pain, and find it necessary to use nitroglycerine, which always gave prompt relief. By 1957 the angina was extremely troublesome and he was averaging 20-30 nitroglycerine tablets a day for many months. Ronicol, Cyclospasmol, and a variety of long-acting coronary vasodilators did not help. The angina was becoming so persistent that it was feared another occlusion was imminent. He was put on anticoagulant therapy but developed a generalized pruritus which we attributed to the Dindevan. The angina was not benefited and the anticoagulant therapy was abandoned. It was then decided to try parenteral magnesium sulphate. The injections were given by his son. After the second injection he stated he was much improved. He received a course of 10 injections. Long before the end of the course he found that his daily nitroglycerine requirements had fallen to *nil* or 1 or 2 a day.

After about 5 months the angina began to recur. A second course of injections again virtually abolished his need for nitroglycerine. A third course was much less beneficial and a fourth course of dubious benefit.

The patient and his son are convinced of the causal relationship between the treatment and the improvement. The vast number of medicines tried previously, the injections given for his peripheral vascular disease, and the trial of Dindevan, which involved taking blood for prothrombin estimations, all acted as a control of sorts from the psychological angle. In fact the initiation of the anticoagulant regime caught his imagination much more than the magnesium-sulphate regime.

I have now been associated with quite a large number of cases in which this treatment has been tried. My impression is that it is often, but by no means always, associated with a marked improvement of the angina for a period of several months. No other form of therapy, including antithyroid drugs, has left me with the same impression. The improvement, when it does occur, usually starts after the first few injections. This fact obviously assists assessment, making it less likely that improvement is due to the passage of time. I am fully aware how fallacious impressions may be. Controlled investigation by the giving of inert injections is virtually impossible in private practice. I would however like to join Dr. Crouch's plea in your issue of 21 June for a controlled investigation on a large scale in a teaching hospital.

B. G. Shapiro

Cape Town
28 June 1958

[An article on this subject by Drs. A. Sandler and M. McGregor appears in this issue at p. 697. *Editor.*]

PARENTERAL MAGNESIUM SULPHATE

To the Editor: The earliest reference to the use of parenteral magnesium sulphate I can find in my references is an article by Kuthan.[1] I have been using magnesium sulphate intravenously since reading that article, in accordance with the indications mentioned in the article.

My friend, Dr. A. Janovics, was good enough to manufacture the ampoules for me. I originally started with only a 10% solution, and after consultation with Dr. Janovics we combined it with 10% dextrose. I have seen only good clinical results from its use. It is obviously not used in cases of glycosuria, and I have never seen glycosuria developing from its daily use.

The originally suggested 15% solution I have found to produce unpleasant symptoms especially during the hot summer months. I have now stopped using such heroic doses.

Nathan Finn

27 CNA Building
East London
24 June 1958

1. Kuthan, S. (1938): Med. Klin., **34**, 1363.

THE MEDICAL COUNCIL ELECTION

To the Editor: It has been suggested to me that a useful purpose would be served if, as a senior member of the 10 elected to the Medical and Dental Council by the medical profession, I wrote a letter similar to one I published before the last election.

Towards the end of this year registered medical practitioners in the Union will be called upon to elect 10 representatives to hold office from 1959 to 1963. A few impressions from a member may prove of advantage both to the electorate and to those who contemplate standing for election.

Having served for a considerable time both on the Medical Council and on standing committees of the Medical Association, I feel justified in suggesting that the Medical Council is a body that carries heavier responsibilities than any other on which a medical practitioner may be called upon to work. For this reason the election demands the serious consideration of every registered practitioner.

The 10 elected members should be chosen, each because of his qualifications for this very specialized type of work, but never to represent the interests of this or that group within the profession. There is no place for sectional interests in a council that has such heavy responsibilities both to the profession and to the public.

The main function of the Council is to keep a Register which guarantees to the State that everyone whose name is on that Register (*a*) has the requisite medical educational qualifications, and (*b*) lives up to an accepted code of medical ethics. It is the duty of the Council to prescribe the standards of medical education and examination which shall be maintained at the medical schools, and to decide which qualifications, whether obtained inside or outside the Union, shall entitle the holder to be registered as a medical practitioner. A wide knowledge and experience of medical education therefore, is desirable in a member. A personal experience of the doctor-patient relationship and the problems faced by a doctor in everyday practice is invaluable to a councillor who may be faced with the difficult duty of having to decide, after due inquiry, whether or not a colleague is guilty of improper conduct in a personal or professional sense.

Membership of the Council may demand sacrifices, to the extent of loss of practice. Although the Council as a whole meets only twice a year for 4 or 5 days, members of the various committees must be prepared for more frequent meetings. For in-

stance, the Executive Committee meets in Pretoria for 2 days each month. If a member is elected to that committee and does not live in the vicinity, he may have to decide between his practice and the proper carrying out of his duty as a member of the Council. To illustrate this I give my own experience: Council work has involved my travelling nearly 300,000 miles, and during the 9½ years I have been a member of the Executive Committee has resulted in my being away from my practice for 5 or 6 days every month.

The following quotation is taken from the judgment given by de Waal J.P., Solomon and de Wet J.J. in Groenewald v. South African Medical Council, to indicate how the Courts have interpreted one of the functions of the Council: 'They—the Medical Council—are the custodians of the honour and rectitude of the profession. It is left to them to say to what standards of honour the members of the profession should conform, and much depends upon their opinion whether the standard of personal and professional honour of its members is a high one or not'.

R. Lance Impey
'Finchcroft'
Talana Road, Claremont, Cape
2 July 1958

'THERE IS NOTHING NEW UNDER THE SUN'

To the Editor: While discussing with a colleague the role of the lipids in the aetiology of coronary thrombosis as suggested by the recent work of Keys, Brock and others, a Rabbi was listening in to the discussion. He chipped in to tell us this was nothing new and that it could be found in the Bible. On looking up Leviticus we found that Moses enjoined the Hebrews not to eat certain fats in the body though he gives no reasons for this prohibition. The fats listed are those of the intestines, the fat round the stomach (does this mean the omentum?), the peri-renal fat, and the fat above the liver.

The famous Hebrew astronomer, philosopher and physician to the Court of Cairo, Moses Maimonedes (born 1135, died 1204, and buried near Tiberias in Palestine) in a dissertation on this prohibition in his book *Guide for the Perplexed* says: 'The same (prohibition) is the fat of the intestines. It makes one full or satiated but is harmful for our digestion. It produces cold and thickened blood and it should therefore be used for fuel rather than for human consumption.'

The foregoing passage was kindly translated from the Hebrew by Dr. M. Block, of Bloemfontein. Rabbi A. Abrahamson, of Upington, our informant at the discussion, translates from the Hebrew in about the same way but uses the words 'cold, coagulated blood' and says this can reasonably be interpreted as a thrombosis in whichever blood vessel it occurs. The recognized authority for the translation of the *Guide for the Perplexed* is M. Friedlander, and on page 371 he says, 'The fat of the intestines makes us full, it interrupts our digestion and produces cold and thick blood. It is more fit for fuel (than for human food)'.

We must conclude, then, that it was known in those days that certain fats caused cold, thickened blood (i.e. thrombosis) in the blood vessels and that Maimonedes must have observed this clinically, else how would he give this as a reason in his dissertation for the prohibition of these fats by Moses. If, as we believe, the above facts are correct, then, verily, 'there is nothing new under the sun'.

I. Sacks
Neville Sacks
58-59 S.A. Mutual Building
Bloemfontein
28 June 1958

DRIED SKIMMED MILK AND KWASHIORKOR

To the Editor: In an article on this subject in the *Journal* of 31 May 1958[1] it is concluded that roller-dried skimmed milk of high quality which has been properly packed and stored can be as effective in initiating cure as spray-dried milk. It is pointed out that this is a fact of economic importance because of the comparative cheapness of the former process. The question that remains is whether the popular objections to roller-dried milk can be removed.

These objections centre round the unpalatability and the varying quality of most roller-dried forms of skimmed milk which are produced in South Africa and issued by local authorities. At least one large municipality has already changed over to the more expensive spray-dried product. Roller-dried skimmed milk may be coarse or fine in consistency, and white or brownish in colour according to the degree of scorching. When issued in packets by the clinics it tends to harden into a lump that has to be broken before use. It is mixed with difficulty, especially in households where kitchen facilities are limited, and the solid particles do not remain in suspension for any length of time. This makes the milk unpopular as a beverage and, indeed, causes some of the mothers to doubt its worth and to blame it for digestive disorders when they occur. Even if they contrive to mix it for the youngest child, they are unlikely to do so for the other pre-school children.

Some clinics expressly advise the mothers not to use this milk in liquid form but to break it up, roll it fine and use it in soups and stews. It is unlikely, however, that the most needy families will use milk in this unfamiliar way, especially as it has a tendency to scorch on cooking. Milk as a fluid for drinking from cup or bottle is a nutrient familiar to White, Coloured and African mothers. Skimmed milk, dried by the spray-process, has fewer disadvantages than most roller-dried varieties, and can even be mixed with cold water. Ready availability of a standardized product coming simultaneously with a skilled campaign of health teaching would stand a chance of influencing the diet even of the most ignorant of the populace. New Zealand produces an excellent, standardized spray-dried skimmed milk which is sold, I understand, at ninepence per pound.

We are faced with the problem of an infant and child mortality rate comparable only with those of the more backward countries. Our children's wards and out-patients' clinics are filled with patients suffering from diseases directly or indirectly caused by malnutrition, and the financial cost to the provincial councils can be reckoned in thousands of pounds. Moreover, every malnourished child who reaches hospital represents many others who are living barely above the subsistence level. Does the solution to the problem not lie in a more unified approach to it by the departments involved? The desired outlet for surplus milk has been found in dried milk or dried skimmed milk. Dried milk can be made most acceptable to all sections of the population if more care is spent on the processing of it. It is authoritatively stated that a pint of skimmed milk per child per day up to the age of 5 years would abolish child malnutrition as a major problem. Simultaneously it would abolish much of the cost of medical care. More than that, it might produce far-reaching changes in the attitudes of populations. No less an authority than Cicely Williams[2] has recently stressed the profound effects of a high infant and child mortality rate: the fatalism and apathy that it breeds. This gives food for thought to many of us who, in the past, have glibly subscribed to the view that these attitudes are a cause rather than a result of the death of many children.

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1. Pretorius, P. J. *et al.* (1958): S. Afr. Med. J., 32, 563.
2. Williams, C. (1958): Lancet, 1, 920.

CLOSED PANEL APPOINTMENTS

To the Editor: I beg to refer you to my letter of 25 February last in regard to closed panel appointments in relation to medical ethics. With my letter I forwarded you a memorandum for your Association's comments. It has now been drawn to my attention that an article was published in your *Journal*[1] from which it would appear that the memorandum which was sent to you was a memorandum of the Council and expressed the views of the Council in regard to the matter.

The memorandum is not a memorandum of the Council but it is one which was submitted to the Council and which is being considered by a special *ad hoc* Committee. It does not necessarily express the views of the Council.

I have been directed to address you and make the matter quite clear and I shall be glad if you will bring this matter to the notice of those concerned.

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19 June 1958

1. Memorandum (1958): S. Afr. Med. J., 32, 504.